



US 20 Corridor Plan Madison Township, Ohio

**February 2006
Lake County Planning Commission**

Madison Township

US 20 Corridor Plan

Final Draft October 2008

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1 Introduction

1.1 Project description

This plan is a guide to shape the built environment of the US 20 / North Ridge Road corridor, and the land uses along it, to accomplish these goals:

- Improve the safety, traffic flow, and capacity of US 20, in the face of increasing commercial and residential development in the area.
- Improve sewer and water service, *not* to encourage more development along the corridor, but rather as a tool to shape it, and make the area more appealing for quality middle-end retail and office uses.
- Increase the diversity and quality of commercial and retail uses along the corridor, while reducing the proliferation of low-end, vehicle-related and semi-industrial uses.
- Halt and reverse the pattern of unplanned strip development, and channel retail and commercial uses into well-defined, healthy nodes.
- Improve the appearance of the corridor, including architecture, landscaping, business signage, and other elements of the built environment, so it presents a positive impression of the township, fosters a distinctive sense of place, and becomes an attractive gateway between Lake and Ashtabula counties.
- Preserve the viability of the nursery industry along the corridor.



The corridor plan area includes all properties fronting on US 20 /North Ridge Road in Madison Township, extending 1,000 feet (300 meters) north and south of the road.

The street name of United States Route 20 through Madison Township is North Ridge Road. Throughout the plan, the road is called simply "US 20" in most cases. For other roads, more familiar names will be used instead of official county road numbers; for example, "Townline Road" instead of "County Road 19."

1.2 Planning process

The US 20 Corridor Plan was developed through a cooperative effort of Lake County, Madison Township, public officials from neighboring communities, and interested residents and business owners.

Urban planners have used some form of the planning process since the inception of the planning profession. Long ago, Patrick Geddes advocated a three-step procedure: survey, analysis, plan.

Today, most planners use a planning process called the rational model. The rational model usually takes the following form:

1. Identify issues and options.
2. State goals and objectives; identify priorities.
3. Collect and interpret data.
4. Prepare plans.
5. Draft programs for plan implementation.
6. Evaluate potential impacts of plans and implementing programs, and modify the plans accordingly.
7. Review and adopt plans.
8. Review and adopt implementation programs.
9. Administer plan-implementing programs, monitor their impacts, and amend plans in response to feedback.

The US 20 Corridor Plan is only the beginning; the result of steps 1 through 7 of the planning process. The Plan must still be adopted, implemented, evaluated based on its performance and changing needs of the region, and revised as needed.

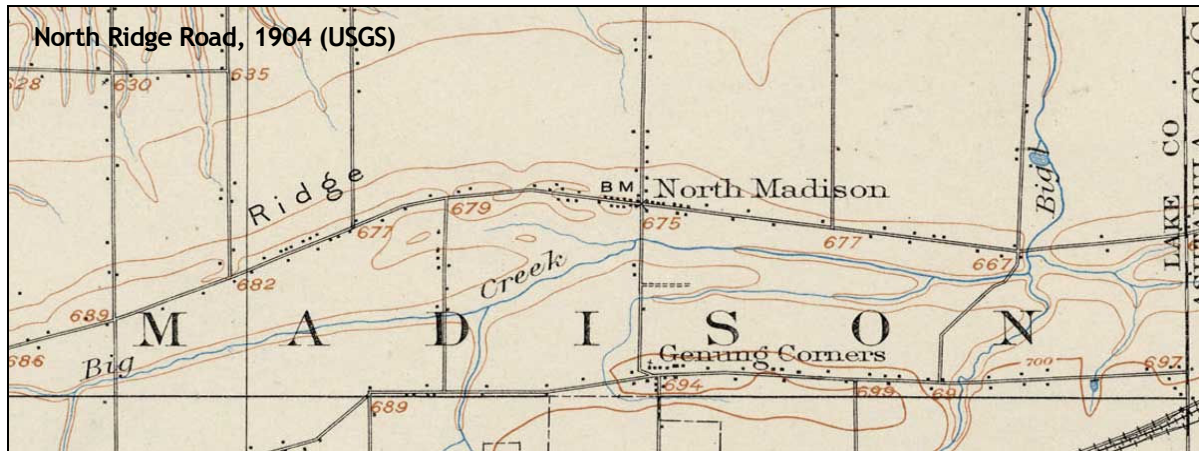
A very important part of the planning process is public participation; that those who live and work in Lake County have a role in charting its future. Meetings were held with residents and community leaders throughout late 2004 and 2003, to solicit their thoughts about the built environment of the US 20 corridor, and the direction in which it should be heading. Three surveys were also conducted as part of the planning process.

The planning process is not finished with the completion of the steps described above. Collecting and analyzing information and implementing comprehensive plans is an ongoing process. Policy statements require occasional revision to respond to new conditions; long-range goals need periodic review. The planning process is a continuous program for keeping the plans of a community current and relevant, and the implementation programs fair and effective.

2 Background

2.1 History of corridor development

US 20, also called North Ridge Road, follows the route of an old Indian trail. The trail ran along the top of a beach ridge that, thousands of years ago, formed the shoreline of Lake Erie.



Starting in 1924, the American Association of State Highway Officials (AASHO), working with the United States Department of Agriculture Bureau of Public Roads, started to lay out the US highway system along primary intercity roads of the day. On November 11, 1926, the path of United States Route 20, running from Newport, Oregon to Boston, Massachusetts, was officially certified. Through Madison Township, the US 20 label would apply to North Ridge Road.

During the Great Depression, the federal and state government put men to work improving and extending roads and highways, including US 20. The US highway system carried the bulk of intercity vehicular traffic, and US 20 served as the major auto route between Cleveland and Buffalo. During World War II, the US highway system supplementing the area's rail lines, allowing more flexibility in ferrying men and materials across the nation.



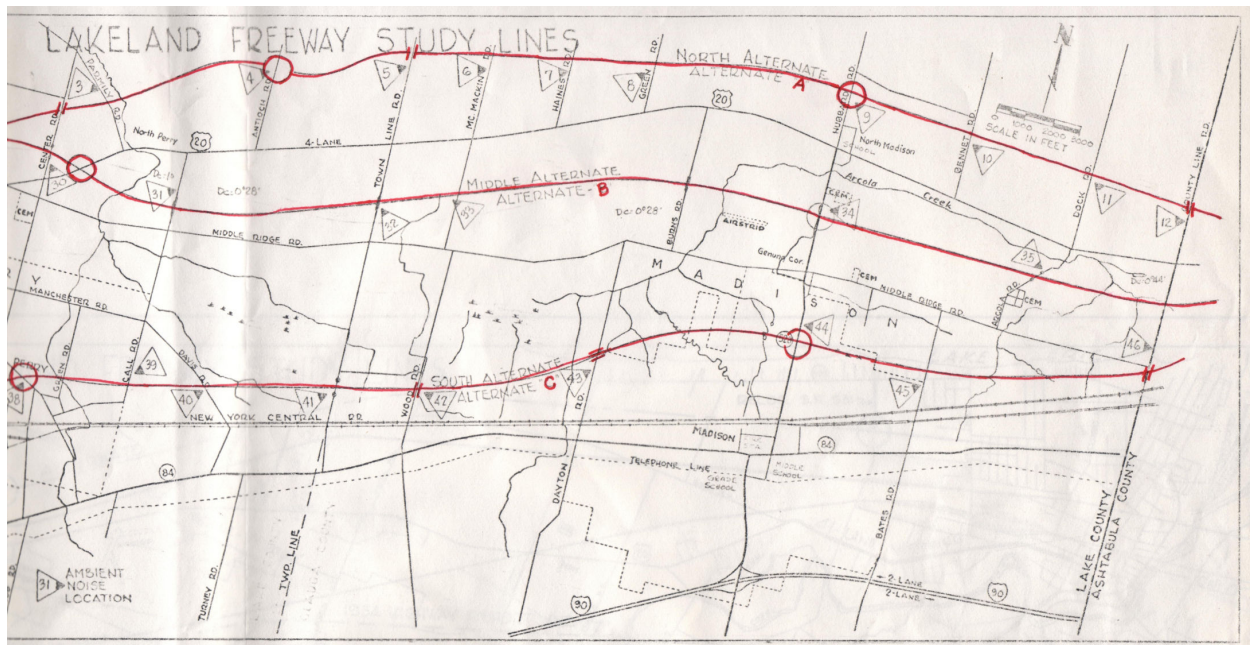
After World War II, motels and gas stations were built in scattered locations along US 20, to serve the rapidly growing number of automobile owners and intercity traveler. The fate of roadside businesses that depended on intercity traffic was sealed years earlier, though. In 1939, the United States Bureau of Public Roads released the report *Toll Roads and Free Roads*, the first formal description of what would become the interstate highway system. The report showed the path of a future expressway that would later be called Interstate 90. On June 29, 1956, President Eisenhower signed a bill creating the National System of Interstate and Defense Highways. Three years later, the portion of I-90

through Madison Township would open. As gaps in the new Interstate highway were filled, intercity traffic on US 20 became scarcer. The businesses along US 20 would remain, but patronized by fewer customers. Many motels became run down, and some were converted to efficiency apartments. Service stations that once served intercity travelers were converted to used car lots. Small shopping plazas were built near the Hubbard Road intersection starting in the late 1960s.

On September 28, 1973, ORC 5533.04 became law and U.S. Route 20 through out the state became known as General McPherson Highway. Major General James McPherson was a Civil War General that was born in Clyde, Ohio and was killed during the Battle of Atlanta in 1864.

2.2 Previous plans

Development in Madison Township was guided by three different comprehensive plans; the 1960 Lake County Comprehensive Plan, the 1982 Madison Township Amendment to the 1960 plan, and the 1996 Madison Township Comprehensive Plan.



1960 Lake County Comprehensive Plan

The 1960 Lake County Comprehensive Plan was a general document that did not address any specific issues in Madison Township. The proposed alignment of the Lakeland Freeway (OH 2) across the township was shown parallel to US 20, about 2000 feet south of the road. Even with the Lakeland Freeway, the plan recommended four 12 foot wide traffic lanes and a four foot wide raised center median in a 100 foot wide right-of-way.

The plan recommended commercial development at the McMackin Road and Dock Road intersections, and between Green Road and Hubbard Road / Lake Street. Strip development was shunned, with the plan reading "the pattern of roadside development especially present along US Route 20 is not encouraged".

The plan also declared "industrial areas will be developed in locations (near) proposed arterial highways." The area around Bennett Road, where an exit of the Lakeland Freeway was proposed, was slated for industrial development. Land in the area was rezoned for industrial use shortly after the plan was adopted.

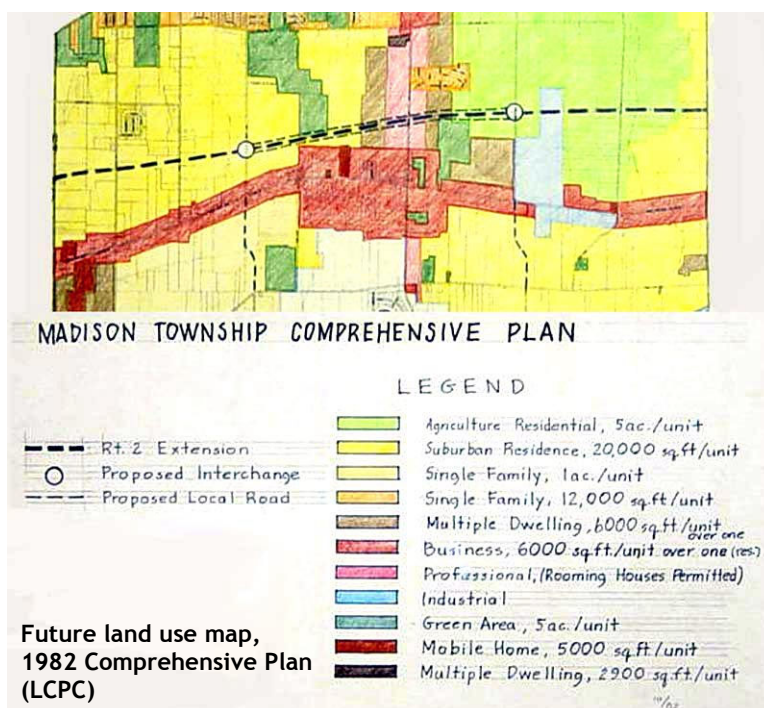
1982 amendment to the Lake County Comprehensive Plan

The 1982 plan amendment to the 1960 county plan included just a few pages defining land use classifications, along with a future land use map. Almost all land fronting US 20 through the township was planned for general business uses. The area northeast of the Bennett Road intersection was planned for general industrial uses. The proposed route of the Lakeland Freeway was shifted to an alignment 2000' north of US 20. The plan presented future land use only, and did not address transportation, utilities, aesthetics, corridor-specific concerns, or any other issues.

1996 Madison Township Comprehensive Plan

The 1996 plan recognized the existence of the corridor and addressed some general issues related to development in the area. The plan was largely a general inventory of existing conditions, and presented few long-range goals or policies. Traffic volume was shown, but congestion was not raised as a concern. Regarding the sewer system, the plan simply said "Expansion may be a possibility should forecasted growth occur."

The appearance of the US 20 corridor was discussed in some detail in the 1996 plan. The plan stated that the corridor "in recent years it has become a ten mile stretch of signs, fast food restaurants, and retail outlets which lack a focal point and harmony in character or design." Poor access management and randomly scattered strip development were also cited as concerns. Despite that, the future land use map called for a long commercial strip along the length of US 20, broken only by an industrial area between Bennett Road and Dock Road.



2.3 Market conditions

Population

Community	County	Population 1990	Population 2000	Estimated population 2004	% change 1990-2004
Madison Township	Lake	15,477	15,494	16,495	+6.6%
Madison Village	Lake	2,477	2,921	3,051	+23.2%
Perry Township	Lake	4,944	6,220	6,692	+35.3%
Perry Village	Lake	1,012	1,195	1,257	+24.2%
North Perry Village	Lake	824	838	931	+13.0%
Leroy Township	Lake	2,581	3,122	3,579	+45.6%
Thompson Township	Geauga	2,219	2,383	2,495	+12.4%
Trumbull Township	Ashtabula	1,286	1,461	1,513	+17.7%
Harpersfield Township	Ashtabula	2,496	2,603	2,640	+5.8%
Geneva	Ashtabula	6,597	6,595	6,495	-1.5%
Geneva-on-the-Lake Village	Ashtabula	1,628	1,545	1,541	-5.3%

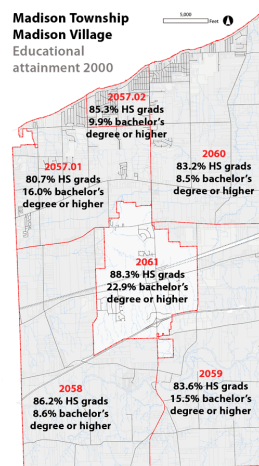
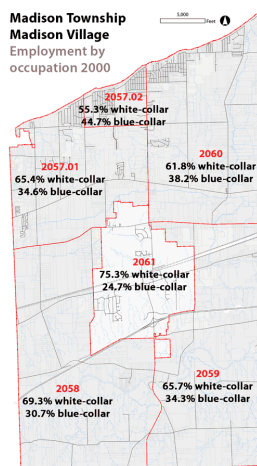
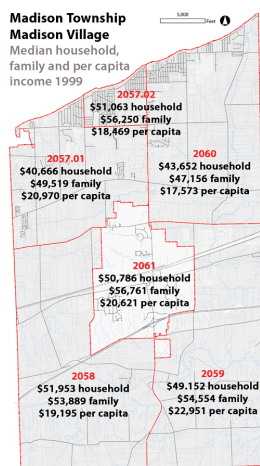
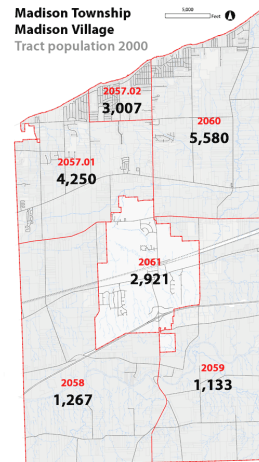
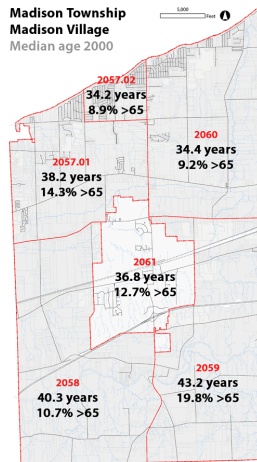
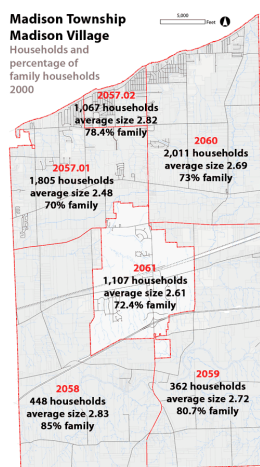
Table 2-1: Population - Madison Township and surrounding communities

Geneva Township	Ashtabula	3,687	3,814	3,809	+3.3%
Total		45,228	48,191	50,498	+11.7%
<i>US Census Bureau, Ohio</i>					

While there is a perception that eastern Lake County and western Ashtabula County are largely rural, the total population of Madison Township and the communities that surround it – areas in a short driving distance of the US 20 corridor – is actually quite sizeable. The population of Madison Township and the communities surrounding it rose from 45,228 residents in 1990 to 48,191 in 2000. The estimated population of the area in 2004 is 50,498. (Table 2-1) By comparison, the population of the City of Mentor, considered the retail heart of Lake County, is estimated at 51,332 in 2004.

The population of the area increased by 6.6% between 1990 and 2000. Population growth is estimated at 4.8% between 2000 and 2004. The population growth rate is higher than Ohio as a whole, which increased by 4.7% between 1990 and 2000, and only 0.9% between 2000 and 2004.

Population growth in the area will not continue indefinitely, of course. Limits to growth include very slow growth of the Cleveland metro area population, which limits how many people will eventually move to exurban areas; distance from professional employment centers, cultural institutions and centers of higher learning; rising energy prices; and decreasing supplies of fossil fuel and natural gas. Despite these obstacles, the area can support more middle-end retail development.

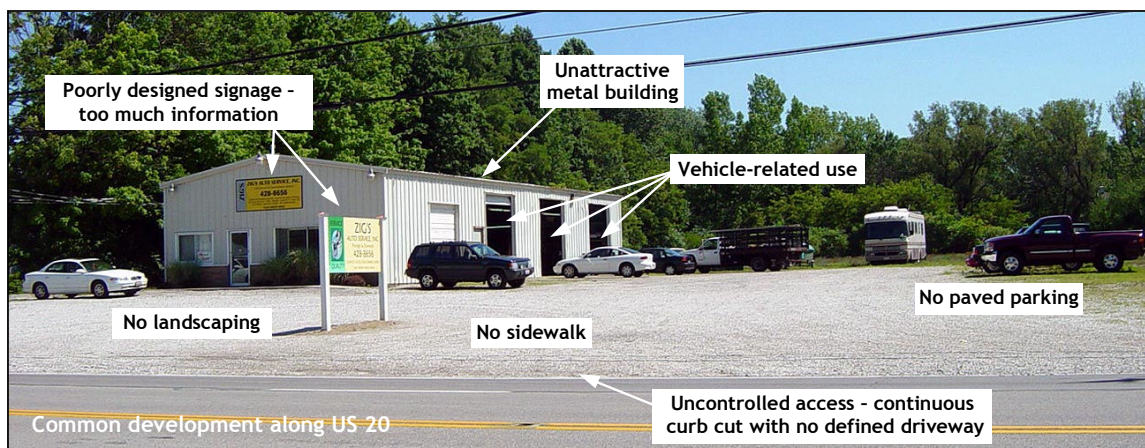


3 Issues

3.1 Existing conditions summarized

The US 20 corridor has been examined in previous plans related to transportation, land use, and utilities. The five and one-half mile long corridor shares some common features from end to end, but also unique characteristics in certain areas.

The fundamental characteristics of the US 20 corridor are that it lacks the functional and aesthetic aspects that would make it an attractive and desirable part of the community. The combination of a perception of congestion, inadequate public utilities, poor pedestrian and bicycle facilities, businesses located in a seemingly random pattern, and unattractive retail and commercial sites creates an environment that cannot attract and keep quality businesses, is unsafe for drivers and pedestrians, and harmful to the quality of life in the area. Key characteristics include:



- Narrow cross-section of US 20, with few dedicated left turn lanes.
- Few paved shoulders, few curbs, and no bicycle lanes.
- Uncontrolled access to US 20 from properties along the street.
- Little cross-access between adjacent commercial uses.
- Few sidewalks, most of which are next to the street with no buffer or tree lawn.
- Inadequate and sporadically located sewer and water service.
- Surplus of commercial and industrial zoned land.
- Unplanned mix of land uses, with low-quality commercial development and semi-industrial businesses scattered along US 20.
- Few attractive commercial buildings along the corridor; corporate architecture, utilitarian structures and prefabricated metal buildings predominate.
- Commercial buildings usually located behind large parking lots with little or no landscaping.
- Relatively tall, often poorly designed pole signs identify many commercial uses and add to visual clutter.

These characteristics are detailed more in other sections of the plan.

The list may sound negative, but there is good news. The majority of land along the corridor is undeveloped. There is still the opportunity to foster quality development that may have a positive effect on the rest of the corridor. Both residents and business owners recognize the current conditions along the corridor, and they understand the need for a new approach to managing development in the area.

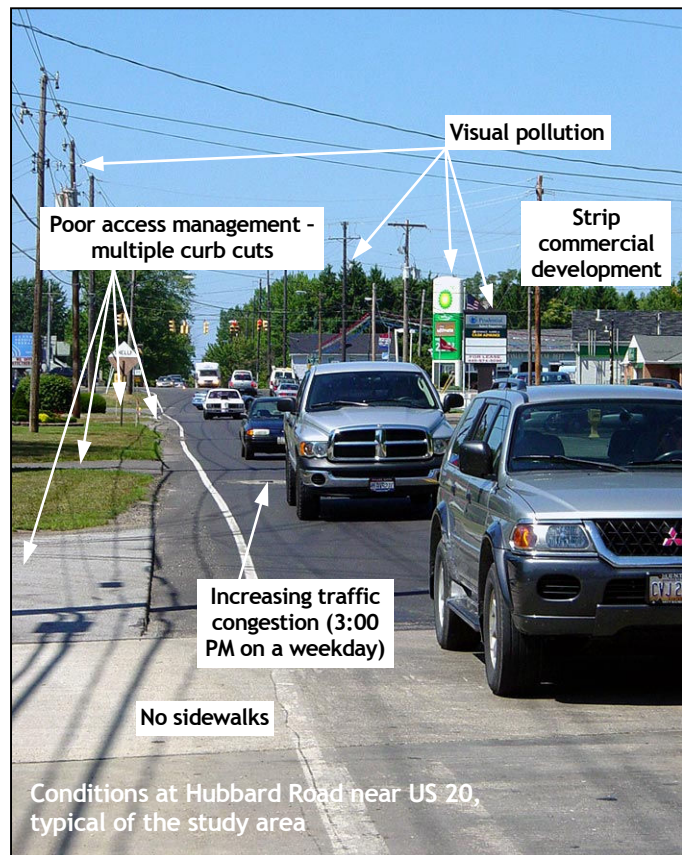
3.2 Future problems summarized

The continued unchecked development of the US 20 corridor area under very permissive land use regulations and transportation planning policies will increase traffic congestion, exacerbate an unkempt appearance, hurt the environment, and make the area less attractive for mid-end businesses and potential residents. It can also hurt neighboring communities by making commuting and travel times longer for their residents, and limiting the opportunity to diversify a tax base with commercial development.

The intent of this plan is *not* to pass judgment on the concept of “big box” and “category killer” stores, their business practices, or the merits of locally owned businesses versus national chains. The impact of big box stores and national chains on the built environment of Madison Township, though, cannot be ignored; it is the main reason this plan was commissioned and adopted.

The construction of a new 220,000 square foot Wal-Mart Supercenter signals the arrival of the US 20 corridor as a retail center. Wal-Mart will bring basic retail jobs, much-sought after shopping, and property tax and to the township. It will also generate 7,500 to 15,000 vehicle trips every day. According to the Ohio Department of Transportation, in 2002 an average of 14,280 vehicles per day passed by the future Wal-Mart site on US 20. Spin-off development – new restaurants, stores, and other commercial uses that may be drawn to the area after Wal-Mart opens – will draw even more traffic onto US 20 and streets that cross it.

With lax access management in the past – how access to a street from intersecting streets and adjacent properties is controlled – businesses could have any number of driveways to and from US 20. This will make congestion even worse than if traffic increased to the same level without new businesses or driveways along US 20. ODOT has tightened the controls for access management.



Wal-Mart construction on US 20. (LCPC)

Strip development is considered a poor development practice for many reasons. From the western boundary of the township to the east, almost all land fronting US 20 is zoned from one end of the township to the other and is fronted by commercially zoned land. Development along the US 20 strip will make traffic congestion even worse – especially considering poor access management – and eliminate any “sense of place” the area once had. The lack of sewers in much of the corridor limits commercial land uses to those that do not require it: vehicle repair

and sales, heavy equipment sales and rental, mini-storage, mobile home sales, and other low-end uses.

To their credit, Wal-Mart officials worked with township leaders to design a building that was visually more appealing than a standard Supercenter. Other national retail and restaurant chains may not be so accommodating, instead using a standard corporate or “trade dress” design for a building that will look like most other locations of the chain. This would harm the community’s “sense of place” and ultimately make the corridor look like most other suburban retail areas in the country.

For commercial uses, township sign regulations permit freestanding signs to be as large as 40 to 160 square feet depending on the property frontage, and up to 24 feet tall. The majority of national chain businesses and shopping center owners will want to display a sign that is as tall and large as legally possible. Sign clutter is already a problem along some parts of US 20, and new large signs will harm the aesthetic quality of the township even more, adding even more visual distractions to drivers along the corridor.

Landscaping requirements in the township zoning resolution are vague. Landscaping standards are listed as an afterthought in a section of the code dealing with administrative procedures for site plan review. In commercial areas, 10% of a site must be “landscaped with grass and plane material or retained in a natural state with vegetative cover.” Nothing governs the location of landscaped areas, or the plant types that are required; a weed-covered treeless patch in the back of a commercial site technically meets township landscaping standards. Parking lot pavement often fronts directly on the street, with no landscaping buffer. Not only does the lack of landscaping hurt the appearance of the corridor and detract from an otherwise semi-rural environment, it also increases stormwater runoff and creates urban heat islands. More commercial development will only make these problems worse.

A common theme of resident comments at community meetings and on surveys was that they did not want to see the corridor develop into an area like US 20 (Mentor Avenue) west of Painesville. With poor road conditions, nonexistent access management, strip commercial zoning, inadequate utilities, and weak zoning regulations, unchecked commercial development will create a corridor that is far worse.



Land in the Bennett Road area is zoned for industrial uses, in anticipation of a proposed exit for an expressway that will never be built. Without the Lakeland Freeway, the site is inconvenient for industry; access to I-90 is awkward and runs through the historic downtown Madison Village. With a surplus of industrial land in eastern Lake and western Ashtabula counties, there is little demand for vacant industrial sites in the area. With relatively low real estate prices, the area may attract only low-end industrial uses that may be seen as undesirable. Underlying zoning along the US 20 corridor already

permits many industrial uses, the presence of which could ward off much-needed mid-end retail and office development.

Madison Township is not an island. Whatever happens along the corridor will affect the Village of Madison and communities surrounding the township. Retail overbuilding could hurt commercial areas in surrounding communities, or deny them the opportunity of developing a retail district of their own.

3.2 Future opportunities summarized

A growing middle income exurban population, and possibly the presence of Wal-Mart, could attract attention from national mid-end retail businesses and restaurants. Changes in Ohio state law offer townships more control over various aspects of commercial development, including building architecture. New transportation planning techniques, endorsed by the state, can help reduce congestion at little cost. A Joint Economic Development District (JEDD) may provide revenue that can be used for transportation, utility and beautification projects.

A growing population that can support commercial development

While the population of Madison Township is small – 16,000 residents – there are over 50,000 residents in the area when surrounding townships and incorporated communities are included. The population of the area is about the same as the cities of Mentor, Cleveland Heights, or Euclid. The area has about as many residents as some micropolitan areas in the United States supporting a large retail base, such as Eddy County/Carlsbad, New Mexico (51,688 in 2004) and Garfield County/Glenwood Springs, Colorado (48,503 in 2004). The population of the area is growing by about 500 new residents every year. There is an established population base that can support middle-end retail and restaurant development.

Better control over the appearance of commercial development

Ohio Senate Bill 18, passed in 2004, is seen as stripping the authority of townships to zone for the purposes of “comfort, convenience, prosperity and general welfare,” which may open the door to development that exceeds the ability of available infrastructure and natural resources to support it. However, it gives townships the right to adopt architectural regulations. Specific building materials cannot be regulated, but any other aspect of building and site design and aesthetics can be controlled. Most commercial architecture in Madison Township is utilitarian or guided by corporate standards. Architectural standards, if adopted, will require high quality building design that offers a positive impression of the township and its businesses, and help reinforce a “sense of place.”

Access management

The Ohio Department of Transportation has endorsed access management as a tool for alleviating traffic congestion, making vehicles flow smoother, and improving road safety. Access management is a process for providing access to land development, while preserving traffic flow on surrounding roadways in terms of safety, capacity, and speed. This is done by managing the location and design of all access points along a road. It also includes use of dedicated turn lanes to keep turning vehicles from blocking through traffic.

Access management is used to improve vehicular and pedestrian safety, maintain road capacity and reduce congestion, and enhance community character and aesthetics. Currently, ORC allows the local townships to pass resolutions to control access management on township roads and the ORC also allows the local county commissioners to pass resolutions to control access on county and township roads if the townships have not done so already. Currently, Ohio Department of Transportation controls the access management on all state or federal highways, so they control access management on US 20 and SR 528.

Joint Economic Development District

A Joint Economic Development District (JEDD) is a special-purpose district that can be created by a contract between different municipal corporations and townships. A JEDD allows for levying an income tax in the district, and the provision of municipal services in unincorporated areas. Income tax revenue in the JEDD area can be shared and used for municipal services, new sewer or water lines, road improvements, beautification, or other programs that will benefit the district.

4 Transportation

4.1 Introduction



Transportation issues are the biggest concern of area residents, businesspeople and public officials, according to surveys and corridor planning meeting comments. In an exurban environment where businesses and schools are widely scattered, and commuting distances are often long, traffic problems will have more of an impact on their day-to-day lives than their suburban and urban peers. Many feel US 20 is congested and dangerous; that traffic is bad, and getting worse by the day.

This section examines all aspects of mobility in the corridor area – cars, bicycles and pedestrians – and offers recommendations, goals and policies that will make it easier and safer to get around in the township.

4.2 Existing conditions

US 20/North Ridge Road through most of Madison Township is a four lane road, with two eastbound and two westbound lanes. In most areas, pavement width is 40 feet (four 10 foot lanes), and the right-of-way width is 60 feet. There are no medians or dedicated turning lanes on most of the road. The road surface is generally well maintained.

At the intersections with Townline Road and Green Road, lane width is 12 feet, and there are dedicated left turn lanes. These intersections were recently improved, along with some others in Painesville and Perry townships, as part of a recent Transportation Equity Act for the 21st Century (TEA 21) project.

In most places, curbs define the edge of the road surface. The curb is often broken, from either a lack of maintenance or a continuous curb cut. There are no paved shoulders or dedicated bicycle lanes.

Access management is poor to nonexistent. Many businesses, located on narrow lots, have two or more access drives. Continuous curb cuts, where the entire frontage of a lot acts as a driveway or access point, are common.

Paved sidewalks run along much of the southern portion of the right-of-way west of Hubbard Road, and parts of the northern portion to the east. Sidewalks are four feet wide. They are separated from traffic lanes by a one to two foot wide tree lawn. Most sidewalks are very poorly maintained. Sidewalks are not plowed or shoveled, and are usually impassible in the winter.

As of 2002, the average daily traffic (ADT) of US 20 ranges from 9,360 at the eastern end of the township to 14,280 at the west end. The posted speed limit for most of the corridor is 45 miles per hour, it is reduced to 35 mile per hour from Burns Road to Hubbard Road.

The functional classification of US 20 through Madison Township, according to the Ohio Department of Transportation, is *principal arterial-other/rural*. This class of roads is considered to have these characteristics:

- Serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel.
- Connect all or nearly all urban areas with 50,000 and over population and the majority of urban areas with 25,000 and over population.
- Provide an integrated network of continuous routes.

Laketran Route 4 provides fixed route bus service along US 20 from Hubbard Road to downtown Painesville.

4.3 Traffic volume, congestion and capacity

Based on surveys and comments at public meetings, traffic congestion appears to be the most pressing concern of residents, businesspeople, and government officials.

Many have provided anecdotal evidence suggesting traffic congestion along US 20 is severe.

Why such an emphasis on traffic? The life of a typical Madison Township resident is centered on – and dependent on – a motor vehicle. According to the US Census Bureau, in 2000 the mean travel time to work for a resident of the Cleveland PMSA is 24 minutes, compared to 29 minutes for a Madison Township resident. With a small employment base, large commuter population, low-density development, and few schools and commercial areas within walking distance of residential areas, township residents spend more time in their vehicles and drive longer distances for work, shopping, and errands.

Damian Kulask of the Eno Transportation Foundation, in the Transportation Planning Handbook (Institute of Transportation Engineers, 1999), writes:

Today, transportation rarely ranks at the top of list of hot issues in public opinion polls. The facilities in place appear to be largely taken for granted. Many local projects stir considerable public interest, but a larger share of national attention focuses on social concerns like environmental problems, noise and safety.



The fact that traffic-related issues rank so highly in various surveys and polls shows just how tightly driving is ingrained in the day-to-day lives of Madison Township residents and businesspeople.

Traffic volume

Traffic along the US 20 corridor has actually become lighter in the past decade. However, the trend may reverse, and traffic may increase, as new retail development occurs.

According to data from the Lake County Engineer and the Ohio Department of Transportation, the traffic volume along US 20 in Madison Township has actually been *decreasing* since 1992. The busiest segment of the road, between the Perry Township boundary and Hubbard Road, was traveled by an average of 17,640 vehicles per day in 1992. In 2002, the ADT fell to 14,280 vehicles per day; a decline of 19%. Between Hubbard Road and Dock Road, the ADT fell 28% between 1992 and 2002. Between Dock Road and the Ashtabula County line, the ADT dropped about 8%. (Table 4-1).

Roadway segment	ADT 1992	ADT 1999	ADT 2002	Δ% 1992-2002
US 20/North Ridge Rd - Townline Rd to Hubbard Rd	17,640	15,530	14,280	-19.0%
US 20/North Ridge Rd - Hubbard Rd / Lake St to Dock Rd	15,620	11,030	11,280	-27.6%
US 20/North Ridge Rd - Dock Rd to County Line Rd	10,150	9,510	9,360	-7.8%
Includes both commercial and passenger vehicles. Ohio Department of Transportation				

Why is traffic dropping, while the population of Madison Township, and surrounding exurban communities in Lake County, is slowly growing? Traffic counts on other major roads in Madison Township also fell between 1992 and 2002, except I-90 and River Street, which has an interchange with I-90. The data suggest that I-90 is being used for east-west traffic that would normally use US 20 and South Ridge Road (OH 84). (Table 4-2)

Roadway segment	ADT 1992	ADT 1999	ADT 2002	Δ% 1992-2002
OH 528/Lake St - US 20 to OH 84/South Ridge Rd/Main St (N/S)	10,360	8,880	10,040	-3.1%
OH 528/River St - OH 84/South Ridge Rd/Main St to I-90 (N/S)	7,460	9,090	9,110	22.1%
OH 84/South Ridge Rd - Townline Rd to OH 528/River Rd (E/W)	5,670	5,980	4,130	-27.1%
OH 84/South Ridge Rd/Main St - OH 528/River St to OH 528/Lake St (E/W)	10,010	8,160	9,800	-2.1%
OH 84/South Ridge Rd/Main St - OH 528/Lake St to Bates Rd (E/W)	5,450	4,080	4,810	-11.7%
OH 84/South Ridge Rd/Main St - Bates Rd to County Line Rd (E/W)	3,840	4,010	3,250	-15.4%
Interstate 90 - Perry/Leroy township line to OH 528/River St/Exit 212 (E/W)	27,040	32,910	33,720	+24.7%
Interstate 90 - OH 528/River St/Exit 212 to Ashtabula County line (E/W)	24,280	33,040	31,340	+29.1%
Includes both commercial and passenger vehicles. Ohio Department of Transportation				

East of OH 528 (Hubbard Road), the ADT of US 20 and South Ridge Road fell by an average of 4,900 vehicles per day between 1992 and 2002. The ADT on I-90 east of OH 528 (River Street) rose by 6,680 vehicles per day during the same period.

Compared to other four lane arterials in Lake County, traffic volume on US 20 in Madison Township is relatively light. (Table 4-3)

Roadway segment	Location	ADT 2002
OH 91/SOM Center Rd - OH 84/Ridge Rd to I-90	Willoughby	35,320
OH 615/Center St - OH 2/Lakeland Freeway to Tyler Bl	Mentor	34,630
OH 91/SOM Center Rd - OH 2/Lakeland Freeway to US 20/Mentor Av	Willoughby	33,650
US 20/Mentor Av - Garfield Rd	Mentor	31,980
US 20/Mentor Av - OH 306/Reynolds Rd to Garfield Rd	Mentor	28,310
OH 91/SOM Center Rd - OH 640/Vine St to OH 2/Lakeland Freeway	Eastlake	27,980

Table 4-3: Traffic volume comparison - US 20 with four lane roads in Lake County		
OH 91/SOM Center Rd - US 20/Mentor Av to OH 84/Ridge Rd	Willoughby	27,900
US 20/Euclid Av - OH 91/SOM Center Rd to Willowcroft Rd	Willoughby	26,290
OH 615/Center St - Tyler Bl to US 20/Mentor Av	Mentor	25,280
US 20/Mentor Av - OH 615/Center St to Painesville Township boundary	Mentor	25,240
US 20/North Ridge Rd - OH 2 terminus to Lane Rd	Perry Township	24,920
OH 44 - I-90 to Girdled Rd	Concord Township	23,860
OH 640/Vine St - OH 2/Lakeland Freeway to US 20/Mentor Av	Eastlake	23,710
OH 91/SOM Center Rd - I-90 to OH 6/Chardon Rd	Willoughby Hills	22,310
US 20/Mentor Av - Willoughby city boundary to OH 306/Reynolds Rd	Mentor	22,030
US 20/North Ridge Rd - Lane Rd to Townline Rd	Perry Township	21,260
OH 283/Lakeshore Bl - Cuyahoga County line to OH 640/Vine St	Willowick	19,160
OH 91/SOM Center Rd - OH 283/Lakeshore Bl to Glen Dr	Eastlake	18,420
OH 640/Vine St - E 337 th St to OH 91/SOM Center Rd	Eastlake	18,100
US 20/Mentor Av - Erie St to Mentor city boundary	Willoughby	17,860
OH 640/Vine St - OH 91/SOM Center Rd to OH 2/Lakeland Freeway	Eastlake	16,650
OH 91/SOM Center Rd - Glen Dr to OH 640/Vine St	Eastlake	15,600
US 20/North Ridge Rd - Fairport Nursery Rd to OH 2 terminus	Painesville Township	15,430
OH 640/Vine St - Willowick Rd to E 337 th St	Willowick, Eastlake	14,620
US 20/North Ridge Rd - Townline Rd to Hubbard Rd	Madison Township	14,280
US 20/Euclid Av - OH 633/Lloyd Rd to Willowcroft Rd	Wickliffe	13,640
OH 91/SOM Center Rd - OH 6/Chardon Rd to Cuyahoga county line	Willoughby Hills	12,860
OH 44 -Girdled Rd to Geauga county line	Concord Township	11,640
US 20/North Ridge Rd - Hubbard Rd to Dock Rd (4)	Madison Township	11,280
OH 640/Vine St - OH 283/Lakeshore Bl to Willowick Rd	Willowick	10,950
OH 615/Center St - US 20/Mentor Av to Chillicothe Rd*	Mentor	9,750
US 20/North Ridge Rd - Dock Rd to County Line Rd (4)	Madison Township	9,360
OH 44/Heisley Rd - Headlands State Park to OH 283/Lakeshore Bl	Mentor	3,660
* Traffic count taken before I-90 Exit 195 opened in 2004 NOACA, Lake County Engineer		

The traffic count on four-lane US 20 in Madison Township is similar to busier two-lane roads in Lake County. (Table 4.4)

Table 4-4: Traffic volume comparison - US 20 with two lane roads in Lake County		
Roadway segment	Location	ADT 2002
Heisley Rd - OH 283/Lakeshore Bl to OH 2/Lakeland Freeway	Mentor	19,030
Heisley Rd - OH 2/Lakeland Freeway to Hendricks St	Mentor	15,000
OH 84/Johnny Cake Ridge Rd - Button Rd to OH 44	Concord Township	14,730
US 20/North Ridge Rd - Townline Rd to Hubbard Rd (4 lanes)	Madison Township	14,280
OH 306/Chillcothe Rd - Eisenhower Dr to Eagle Rd	Kirtland	13,810
OH 84/Johnny Cake Ridge Rd - OH 306/Broadmoor Rd to OH 615/Center St	Mentor	13,430
OH 283/Lakeshore Bl - Lost Nation Rd to OH 306/Reynolds Rd	Willoughby	13,230
Hopkins Rd - Jackson St to Tyler Rd	Mentor	13,000
OH 84/Johnny Cake Ridge Rd - Little Mountain Rd to Button Rd	Mentor, Concord Township	12,600
OH 283/Lakeshore Bl - Corduroy Rd to OH 44/Heisley Rd	Mentor	12,490
OH 84/Johnny Cake Ridge Rd - OH 44 to Ravenna Rd	Painesville Township	12,060
Andrews Rd	Mentor-on-the-Lake	11,700
OH 306/Chillcothe Rd - Eagle Rd to OH 6/Chardon Rd	Kirtland	11,650
OH 84/Johnny Cake Ridge Rd - OH 615/Center St to Little Mountain Rd	Mentor	11,600
US 20/North Ridge Rd - Hubbard Rd to Dock Rd (4 lanes)	Madison Township	11,280
OH 6/Chardon Rd - SOM Center Rd to OH 174/River Rd	Willoughby Hills	11,060
River St - Main St to I-90	Madison Township	10,040
Hubbard Rd - US 20 to Westwind Dr	Madison Township	9,800
Jackson St - township boundary to OH 44	Painesville Township	9,450
US 20/North Ridge Rd - Dock Rd to County Line Rd (4 lanes)	Madison Township	9,360
OH 283/Lakeshore Bl - Center Rd to Corduroy Rd	Mentor	9,120
OH 84/N Lake St - US 20 to Main St	Madison Township, Madison Village	9,110
Hopkins Rd - US 20/Mentor Av to Jackson St	Mentor	9,000
OH 6/Chardon Rd - OH 84/Bishop Rd to OH 91/SOM Center Rd	Willoughby Hills	7,810
OH 6/Chardon Rd - OH 174/River Rd to OH 306/Chillcothe Rd	Willoughby Hills, Kirtland	9,750
OH 283/Lakeshore Bl - Chagrin River to Lost Nation Rd	Eastlake	9,510
NOACA, Lake County Engineer		

Congestion

A state of “congestion” is often in the eye of the beholder. There is no fine line defining the point that a road becomes congested, but there are ways to classify how good or bad traffic is. US 20 serves as a suburban arterial, even though it was not designed for that duty.

Complaints about congestion are commonplace in urban, suburban, and even exurban and rural areas, but there is little agreement about what congestion actually is, how it can be measured, how much is tolerable, how much it costs, and how to characterize the extent of the problem. The severity of congestion depends on definitions, statistics, behavioral tolerances, personal values, and comparisons.

A road is considered congested when the traffic flow approaches or becomes greater than the traffic-carrying capacity of a roadway. Congestion is defined in TEA 21 as “the level at which transportation system performance is no longer acceptable due to traffic interference.” The term “acceptable” depends on factors such as the type of road, its setting, and the time of day.

Traffic engineers use a ranking system called the *level of service*, or LOS, to classify flow conditions along a road segment; the efficiency of a roadway segment at moving motor vehicles through the zone. Level of service grades do not take into consideration the comfort or safety of pedestrians, bicycles or other non-motorized users of a road. There are six level of service grades used:

- **LOS A:** free flow, with low volumes and high speeds. The speed of a vehicle is controlled only by the desires of the driver and prevailing conditions.
- **LOS B:** stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation.
- **LOS C:** mostly stable flow, but speeds and maneuverability are more closely constricted by higher traffic volumes. Driver comfort and confidence will begin to decrease.
- **LOS D:** approaching unstable flow, with tolerable operating speeds. However, driving speed is considerably affected by changes in operating conditions. It becomes more difficult to make left turns or change lanes.
- **LOS E:** condition that cannot be described by speed alone. Operating speeds are lower than in LOS D, with volume at or near the capacity of the highway. There are few gaps between vehicles, and little room to maneuver.
- **LOS F:** breakdown conditions, where uniform traffic flow cannot be maintained, causing a temporary reduction in capacity as queues build. This includes frequent stop-and-go traffic, traffic backed up for two or more changes of a light, blockages caused by traffic turning or lane merges, and traffic volumes much larger than the road was designed to handle.

The Northeast Ohio Area Coordinating Agency (NOACA) has several formulas and criteria for determining the level of service in their Congestion Management System (CMS) Manual of Practice. For US 20, considered a Class I arterial by NOACA, the criteria is:

Arterial class	Range of free-flow speeds (MPH)	Typical free-flow speed (MPH)	Level of service and associated average travel speed					
			A	B	C	D	E	F
I	45-55	50	>42	>34-42	>27-34	>21-27	>16-21	<16

Under the NOACA CMS guidelines, level of service D is considered acceptable. US 20 is considered to have a LOS of B to C, and it not included on the NOACA inventory of most congested streets in the Cleveland area.

Capacity

Traffic on US 20 is not greater than the capacity of the road - but capacity is variable.

The capacity of a road depends on several variables; lane width and number, geometry (turns, curves and slope), cross streets, signals, speed limit, number of driveways and access points, the presence of turning lanes, the desired level of service, and the context of the road – urban, suburban or rural.

A simple table of service volumes for different types of roadway, from the Institute of Transportation Engineers, offers an estimation of the capacity of multilane highways in suburban areas. For a road like US 20, with four lanes, limited traffic signals and relatively few cross streets, the service volume is:

Level of service	One direction through service volume (vehicles/hour)	Both directions through service volume (vehicles/hour)
A	n/a	n/a
B	1,470	2,940
C	1,760	3,520
D	1,890	3,780
E	1,890	3,780

The maximum service volume at a signalized intersection can be increased by about 35% if a dedicated left turn lane is available.

Is traffic on US 20 really that bad?

According to the numbers, there are few problems with traffic on US 20. However, numbers alone do not tell the whole story.

The amount of traffic carried on US 20 is lower than most four lane roads in the county, and roughly equal to busier two lane roads in the area. The level of service is scored high, and the road is not considered congested by NOACA. Traffic volume on the road is below capacity for lower levels of service. Despite this, residents and businesspeople in the township generally believe traffic on US 20 is bad; terrible enough to be considered the most important issue along the corridor.

Why do residents feel traffic is congested and generally bad, when the reality is different? Despite good traffic flow, there are elements of US 20 and its traffic that make driving the road a challenge.

Substandard lanes and right-of-way. Lanes on US 20 are only 10 feet wide, compared to 12 feet on most four lane roads. The road surface is in a 80 wide right-of-way.

The narrow lanes of US 20 can make drivers feel less secure and confident. Drivers are closer to oncoming traffic, including heavy trucks wide enough to fill almost an entire lane. Utility poles are close to the pavement, visually framing the road and making it appear even narrower and more confining. The feeling of insecurity and danger when driving on US 20 may lead to the nickname of the road among some residents – “Blood Alley.”

High speed traffic. One word often used to describe traffic on US 20 is “crazy.” The posted speed limit is 45 miles per hour, but traffic normally flows at higher speeds. The road has few turns and relatively few traffic lights compared to arterials in suburban and urban areas.

While high speed traffic may be safely accommodated on a modern arterial, it is much more dangerous on a road built to 1940s standards. High speed traffic on a road that is narrower than most also hurts driver confidence and comfort.

Unpredictable traffic patterns. Access management enforcement along US 20 has been lax over the years, and the amount of conflict points – where a driveway meets US 20 – is quite high for a road in an exurban setting. Most businesses have two or more access points, and continuous curb cuts are common. There is no left hand turn lane, and a driver wanting to turn left into one of the many driveways must stop in the passing lane, causing traffic to back up behind them. Traffic slows behind cars turning into and out of driveways along the road. There are also several semi-industrial uses along US 20, such as excavating firms and trucking companies, where heavy trucks frequently enter and leave the road.

All of these situations are exacerbated during rush hours and inclement weather, especially heavy snow.

The exurban setting of US 20 may also be a factor in how traffic is perceived. What appears to be freeflowing traffic to an urban or suburban resident, a traffic engineer, or a planner, may be seen as congestion in the eyes of those living and working in the exurbs. In an exurban area such as Madison Township, residents may have the expectation that traffic will reflect their low-density, semi-rural/semi-suburban surroundings, and be scattered and light. Anything more might be perceived as “congestion”, even if there are few traffic delays, because it seems out of context with an exurban environment. Residents also spend more time in their cars than those in more densely populated areas, so they may have more exposure to traffic problems. Whether or not congestion actually exists, the perception of it affects the perceived quality of life.

US 20 has the design of a 1930s through route, but is now serving a much different role, functioning as a 2000s suburban arterial. Traffic volume is relatively low today, but it will increase dramatically as Wal-Mart and other new commercial uses open along the corridor.

4.4 Access management

Access management along the US 20 corridor and SR 528 are controlled by Ohio Department of Transportation, there is no access management along the north/south connectors. Uncontrolled access increases congestion, and decreases the carrying capacity of the road. There are many ways the township can implement access management requirements that will help improve traffic flow and safety along the corridor, as well as aesthetics.

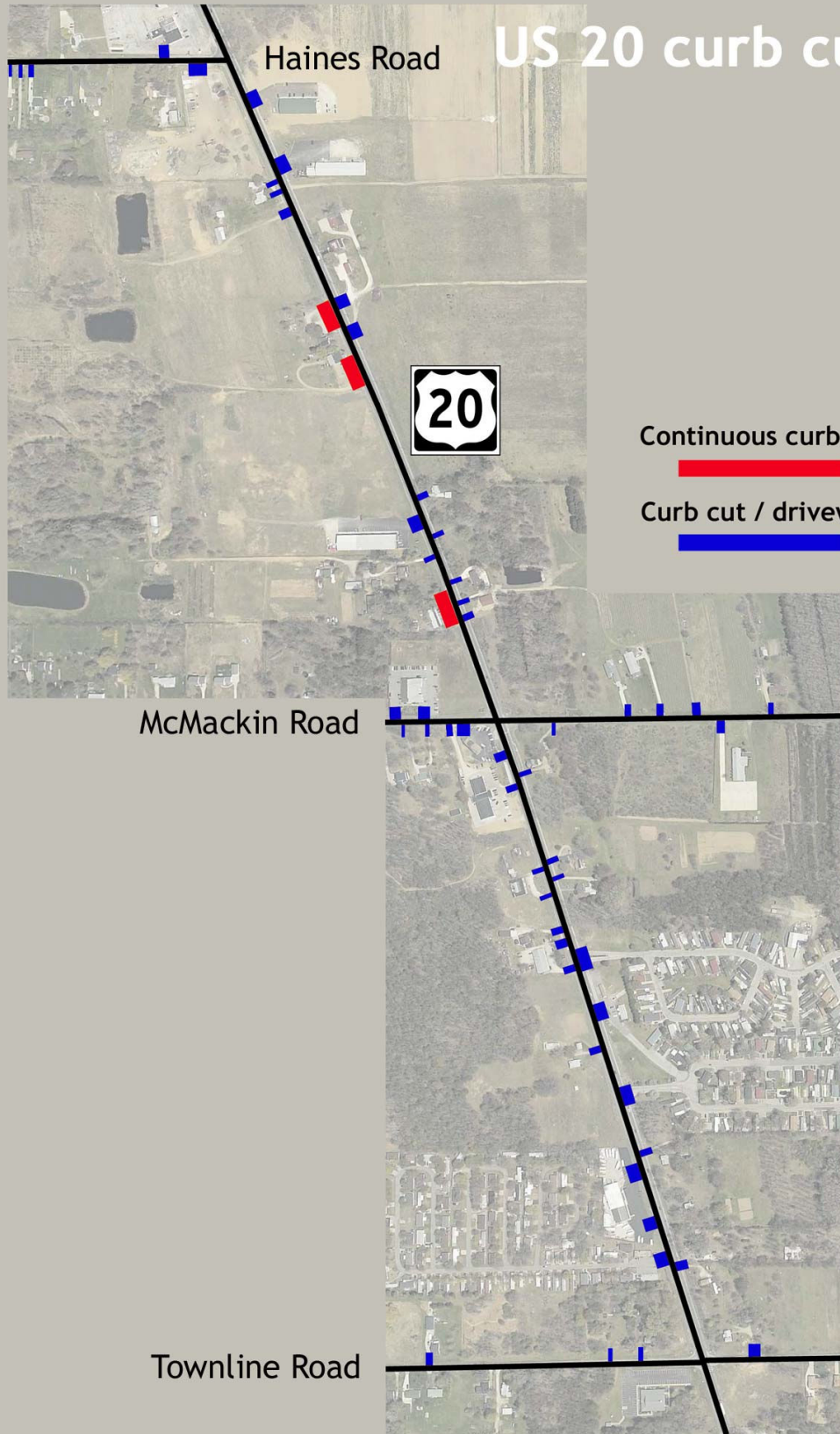
Businesses along US 20 and cross streets usually have unfettered access to the road. Businesses often have two or more driveways or curb cuts from the street to provide access.

Many businesses along US 20 have continuous curb cuts, where the pavement of a business parking lot will meet the road surface along the entire frontage, with no landscape buffer or physical barrier separating them. (Location maps are on the following pages.) This causes the street, parking lot, and sidewalk to bleed together as a mass of pavement. Continuous curb cuts create a very unsafe pedestrian environment, because vehicles can cross a pedestrian path anywhere. Continuous curb cuts make it difficult for a driver to find the correct entrance to a business. They also increase stormwater runoff, eliminate any visual buffer between the street and a building, and present an unkempt, unappealing and makeshift appearance of a commercial district. Many access problems along US 20 are the result of poor subdivision, zoning and site planning requirements and practices in the past.

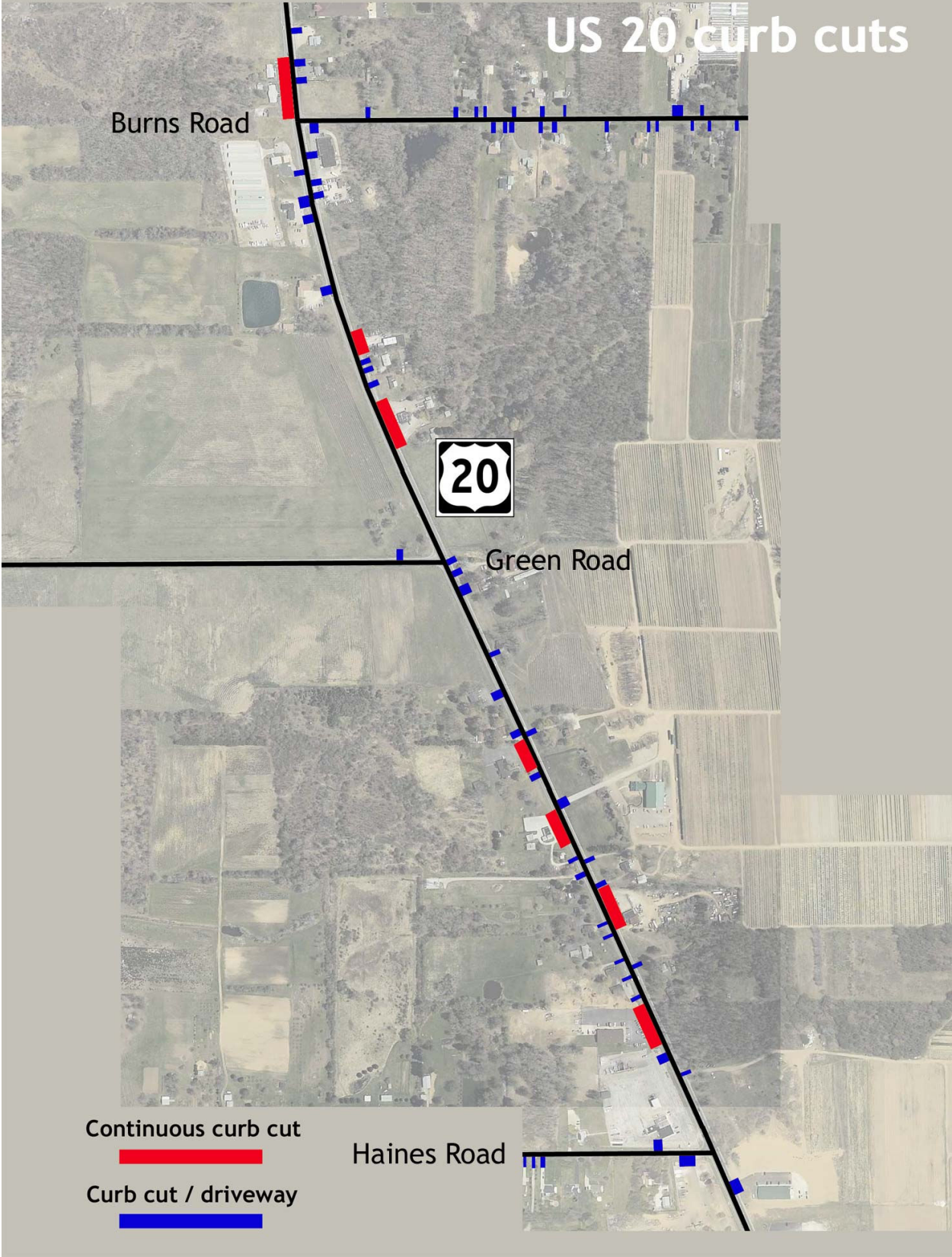
Access management is a process for providing access to land development, while preserving traffic flow on surrounding roadways in terms of safety, capacity, and speed. This is done by managing location, design and operation of driveways, median openings, and street connections along a road. It also includes use of dedicated turn lanes or bypass lanes, to keep turning vehicles from blocking through traffic.

Access management is used to improve vehicular and pedestrian safety, maintain road capacity and reduce congestion, and enhance community character and aesthetics.

US 20 curb cuts



US 20 curb cuts



US 20 curb cuts

Hubbard
Road

Lake
Street



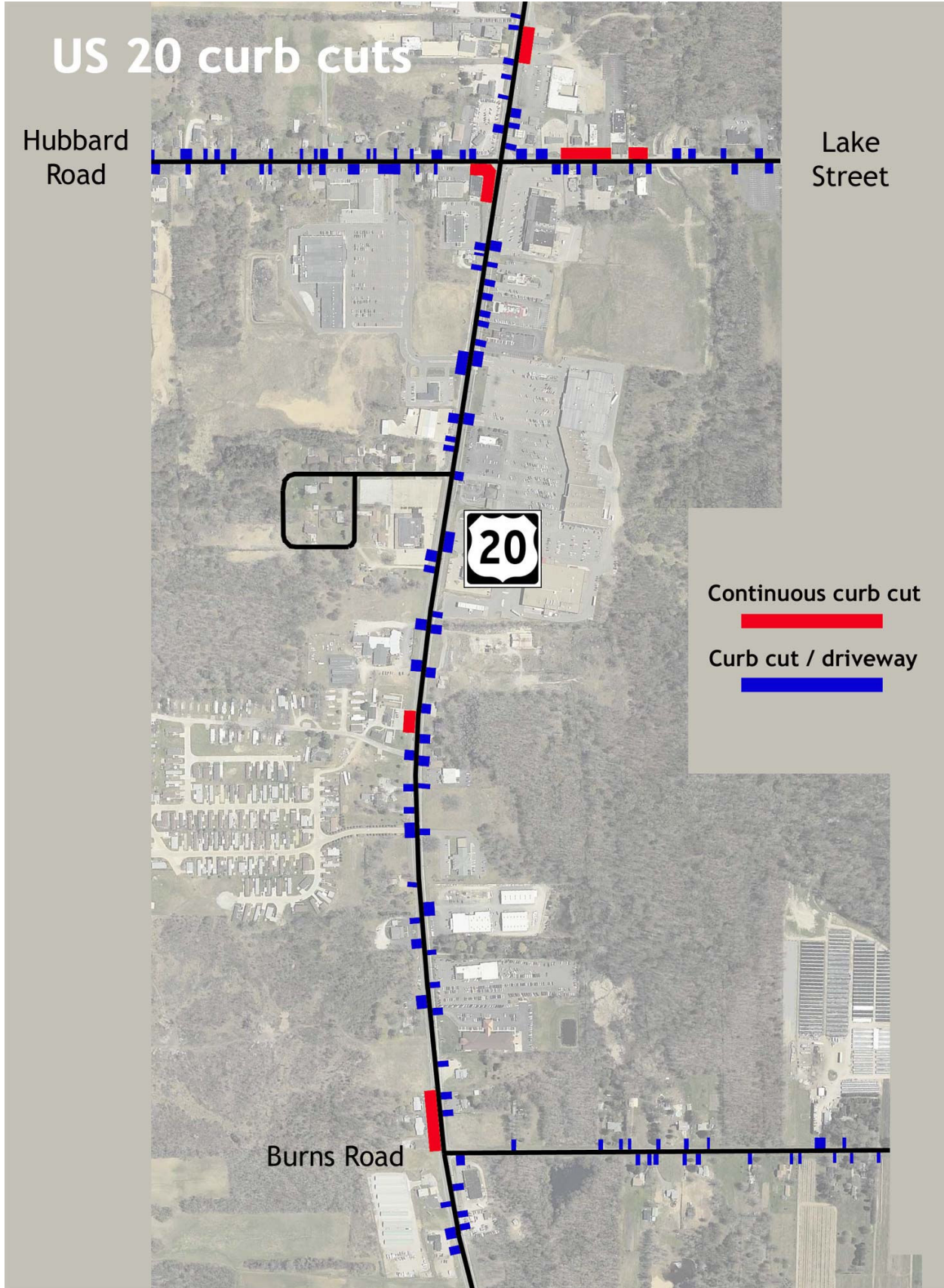
Continuous curb cut



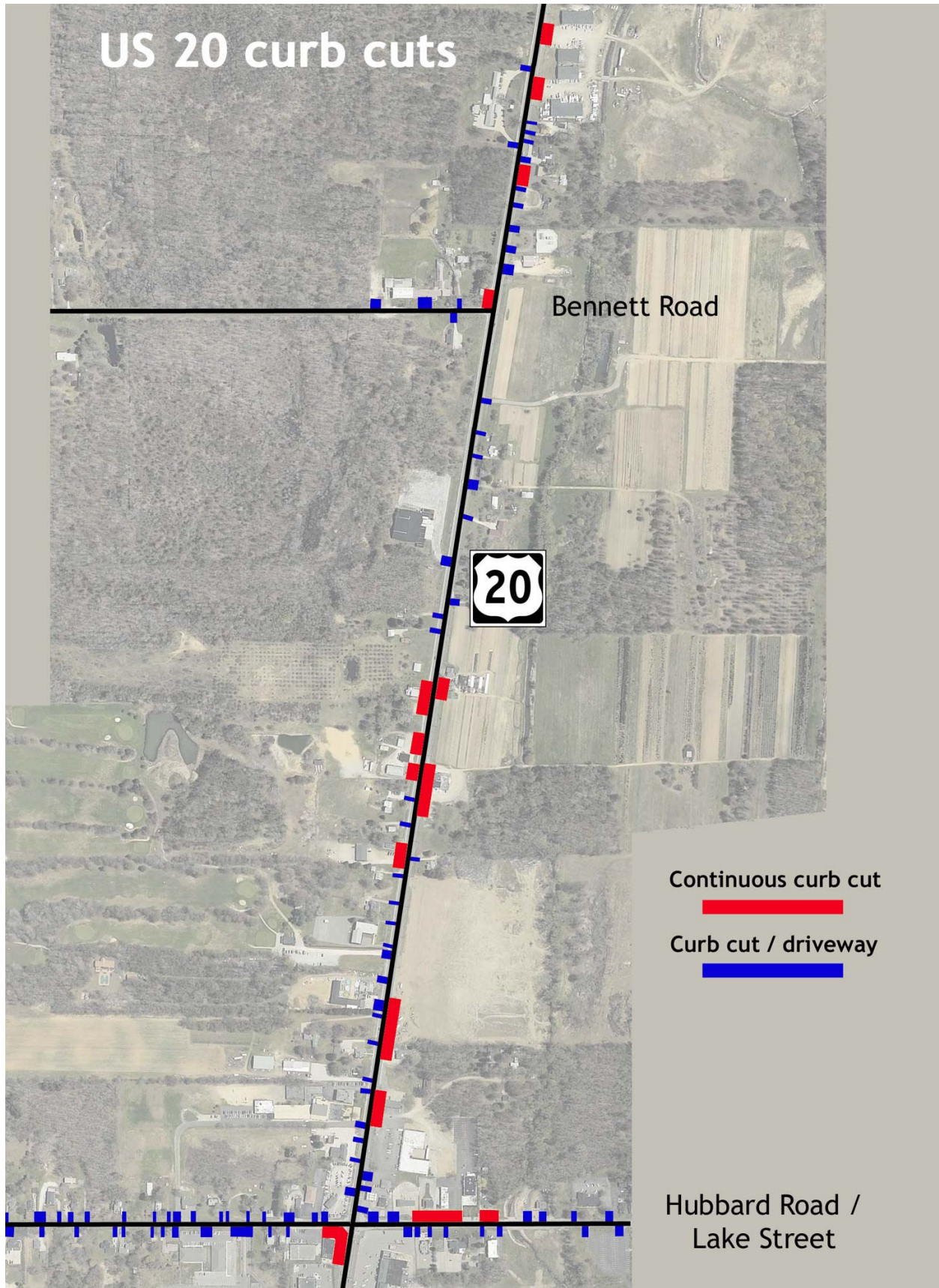
Curb cut / driveway



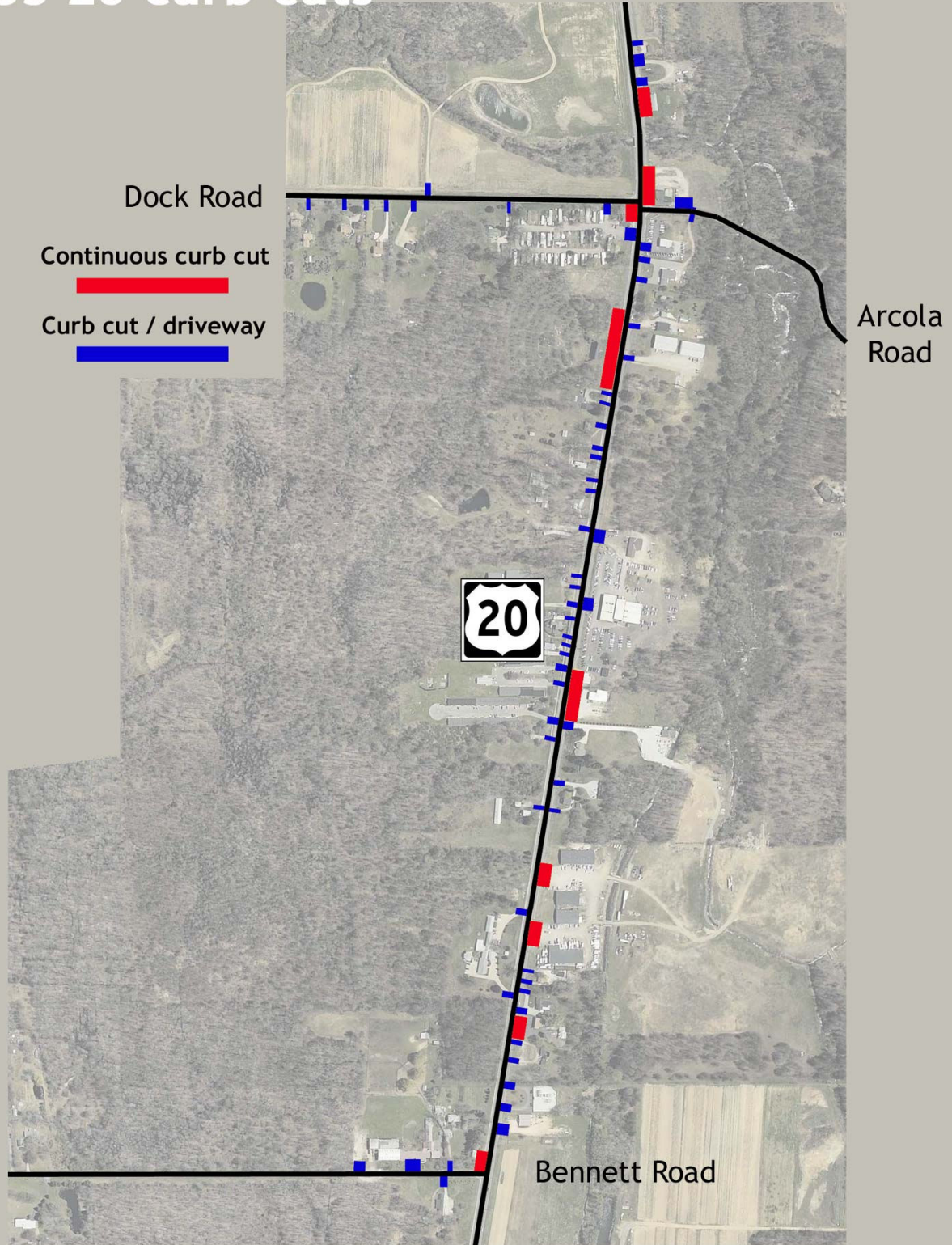
Burns Road



US 20 curb cuts



US 20 curb cuts



US 20 curb cuts

Townline Road

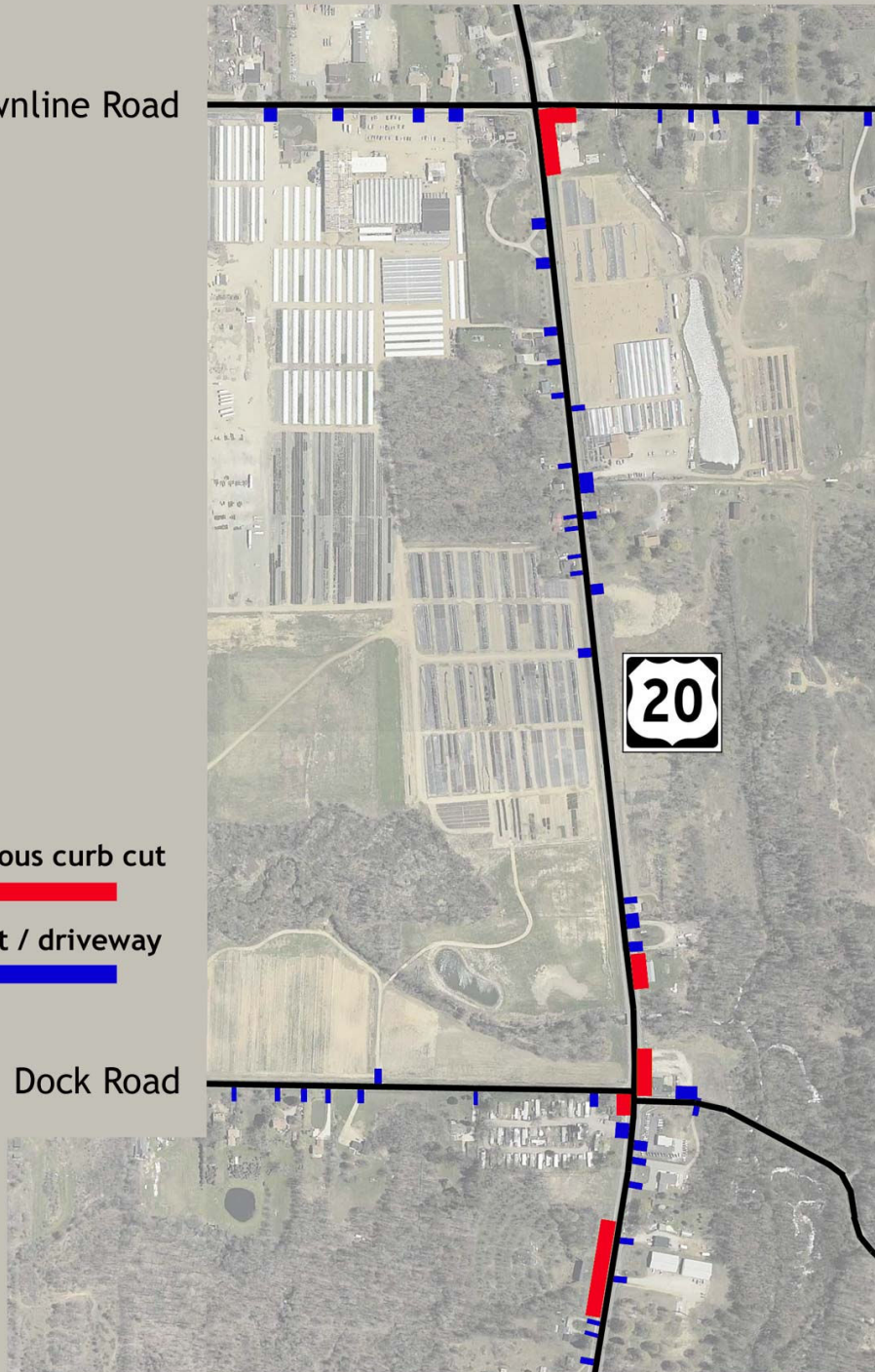
Continuous curb cut



Curb cut / driveway



Dock Road



Arcola
Road

By maintaining the capacity and level of service of the road, access management protects the substantial public investment in transportation, and reduces the need for expensive improvements. Studies conducted in Florida and Colorado suggest that poor spacing, design, and location of driveways lower average travel speed, and improvements in access management can increase roadway capacity. Research has also shown that access management helps reduce the rate and severity of traffic accidents. Good definition and spacing of driveways also improves pedestrian and bicycle safety, by reducing the potential for conflicts with turning vehicles.

From a land development perspective, access management requirements further the orderly layout and use of land and help discourage poor subdivision and site design. The quality of site access is also important to the success of a development project. The Urban Land Institute *Shopping Center Development Handbook* warns that poorly designed entrances and exits not only present a traffic hazard, but also cause congestion that can create a poor image of the center. Reducing the number and frequency of driveways and median openings also improves the appearance of major corridors. More land is freed for landscaping, the visual dominance of paved areas is reduced, and scenic or environmental features can be protected. access management requires coordination of land use and transportation objectives. The township can address the interdependence of land division and access and add access management regulations in its zoning resolution. Access management techniques usually include the following:

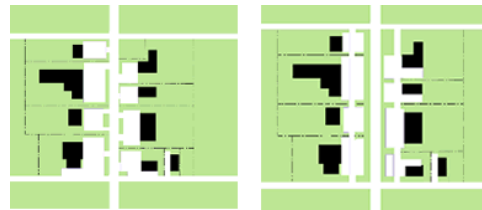
- Regulation of driveway spacing, corner clearance, and sight distance.
- Increased minimum lot frontage and setback requirements along thoroughfares.
- Restriction on the number of driveways for existing lots, and consolidating access wherever possible.
- Requirements for driveway design elements and conditions requiring their use.
- Requiring internal connections, unified circulation and parking plans between adjacent properties.
- Treating properties under the same ownership and those developed as a unified project as one property for the purpose of access control.
- Using frontage and rearage roads to serve as a common access drive for properties along a corridor.

What is access management?

Access management is a group of strategies, tools, and techniques that work to improve the safety and efficiency of roads - not by adding lanes but by controlling where vehicles can enter, leave and cross a road.

For example, consider a commercial strip that has developed over several decades along both sides of a four lane road. Without access management, the businesses with frontage on the road would all have individual curb cuts for their driveways that let drivers get into their often small parking lot. People trying to pull off the street would slow traffic behind them, and if turning left across the oncoming traffic lane, a number of risks arise.

- To cars in the oncoming lane, or cars slowing behind the turning vehicle, who risk accidents.
- To pedestrians trying to walk along the road, at risk when they cross a driveway.
- To bicyclists riding along the shoulder, facing risk as traffic behind the turning vehicle try to use the shoulder to get around the bottleneck.



(Access Management Guidebook, Humstone and Campoli, 1996)

Multiply this by 100 businesses, and there can be a real mess. Safety would be highly compromised, and the resulting traffic snarls frustrate shoppers and commuters alike. The many driveways also reduce the space that could be devoted to landscaping, making the area less attractive. Everyone loses: businesses, residents, and travelers.

This is the situation today along US 20 in Madison Township.

Access management is one solution to this problem. It helps residential developers build safer neighborhoods. It offers ways to group businesses, their customer access, and their parking lots together, reducing costs and maximizing efficiency. It facilitates left turning without slowing traffic or compromising safety. It makes roads safer and more inviting for drivers, pedestrians, and cyclists. It also increases traffic capacity, without having to spend millions to add lanes or build frontage roads.

- Minimizing commercial strip zoning and promote mixed use and flexible zoning.
- Minimizing casual lot splits to prevent access and right-of-way problems.

Driveway location and design

Driveway location and design affects the ability of a driver to safely and easily enter and exit a site. If not properly placed, exiting vehicles may be unable to see oncoming vehicles and motorists on the roadway, or not have adequate time to stop. If driveways are too narrow or have a small turning radius, vehicles will be unable to maneuver quickly and easily off the road. If the turning radius and width are very wide, as often the case in Madison Township, fast maneuvers on and off the site pose safety hazards for pedestrians, bicycles, and vehicles. Without an adequate throat or stacking lane, vehicles may block traffic while waiting to enter a site, or block parking rows while waiting to leave.



This driveway in Mayfield Heights has poor corner clearance, making turns and access awkward and unsafe.

Driveway location and design can be regulated by amending parking lot design standards in the zoning resolution.

Driveway number and spacing

There are too many driveways that access US 20, and they are too close together. Decreasing the number of driveways and increasing their spacing can increase safety and traffic flow.

Many businesses along US 20, even those on narrow lots, have two or more driveways. Business owners sometimes perceive these driveways as offering easier, more convenient access to potential customers, but they increase the number of conflict points along the road, and reduce the spacing between driveways. Redundant driveways increase the points along US 20 where traffic can back up and accidents can occur.

Reasonable spacing between driveways is also important to the safety and capacity of a road, as well as the appearance of a corridor. Managing driveway spacing is essential on roads intended for higher speeds, such as US 20. At higher speeds drivers have less time and distance to react to unexpected situations. In most access management codes, the minimum distance between driveways increases, based on the classification, design speed, and traffic volume of the road.



Redundant driveways along US 20 add points of conflict that make traffic patterns unpredictable, increase the risk of accidents, and contribute to traffic delays.

Driveway number and spacing should be regulated by the zoning resolution parking area standards. Required shared access, discussed later in this section, can also help fix problems with closely spaced and redundant driveways.

Corner clearance

Driveways located too close to intersections are dangerous, and add to traffic congestion.

Corner clearance is the distance from an intersection to the nearest driveway. Corner clearance standards, and restrictions on driveways in acceleration, deceleration and right turn lanes, preserve good traffic operations at intersections, and the safety and convenience of access to corner properties. Having a larger minimum lot size requirement for corner lots will protect the development potential and market value of corner properties. It will also help assure that these properties do not experience access problems as traffic volumes grow.



Cross-access driveways connect the parking areas of three separate businesses in Amherst, New York.

Joint and cross access

Few businesses along US 20 have shared or cross-access driveways. Their use can reduce the number of driveways accessing the road, and also cut the amount of short vehicle trips on the road.

Joint and cross access involves connecting neighboring properties, and consolidating driveways serving more than one property. This allows vehicles to circulate between adjacent businesses without having to re-enter the road. Joint access is also used to connect major developments, reduce the number of driveways, and increase driveway spacing where highway frontage has been subdivided into small lots, such as US 20. This allows more intensive development of a corridor, while maintaining traffic operations and safe and convenient access to businesses.

In many communities, larger parcels are often developed as a unified site, with joint and cross access planned from the start, even if the site will be subdivided into several commercial lots. In Madison Township, land is usually subdivided and developed incrementally over a long period, with no unified plan for a site. Each of the resulting lots is developed individually, with no coordination of access.

One way that joint access can be implemented is by prohibiting direct access to US 20 from outparcels and lots that are carved from larger lots. Instead, the owner of the original parcel must provide access rights from the old lot to the new. If the original host lot is not immediately developed, the developer of the newer lot may be allowed a temporary driveway, which would be closed when the original lot is developed. The easement or access agreement is recorded with the property records, along with a joint maintenance agreement, and an agreement to close the temporary driveway when the joint access system is complete. As an alternative, property owners can also be required to create a binding joint access and cross easement plan before subdividing their property.

For new development on new and existing lots, access rights and stub-out drive aisles to adjacent parcels would be required by zoning resolution parking requirements, along with the appropriate access easements and/or agreements. For lots that are developed, creating stub-out driveways and recording

access easements and/or agreements would be required if the business or use on the property changed, or as a condition of a building permit for major expansion or renovation.

Because access is shared, it will also be easier to share parking areas. The zoning resolution should be amended to allow reduced or lower number of parking spaces for a use if access is shared.

Another option is to declare a cross access corridor on the zoning map for parts of the corridor where retail and commercial development will be intense, along with design requirements; for instance, the travel corridor must extend the entire length of each block it serves, or at least 1,000 feet of linear frontage along US 20, be able to accommodate two-way traffic, and have a design speed of 10 MPH. All properties developing on the US 20 corridor would have to include provisions for the cross access corridor.

To implement joint and cross access requirements, the township zoning resolution and county subdivision regulations would need to be amended.

Frontage and rearage roads

There are no frontage or rearage roads along the US 20 corridor. Frontage and rearage roads can reduce the number of driveways and conflict points along US 20, but they can also be expensive to build.

The idea of frontage roads along US 20 has been raised at several community meetings.

Frontage roads can be useful for eliminating driveway connections along US 20; they would serve almost as a collective driveway to a number of properties. However, if not carefully managed, frontage roads can create operational problems at intersections, especially when combined with high traffic volumes associated with commuter routes and commercial areas. If frontage roads connect close to major intersections, severe congestion, long delays, and high accident rates could result.

Frontage roads would be difficult and very expensive to implement along US 20, because the right-of-way is relatively narrow, and they could eliminate the parking area for many businesses. Frontage roads would also create a very wide traffic corridor that would be visually intimidating, and detract from the exurban character of the township.



Rearage roads behind businesses in suburban Denver, Colorado.

Rearage roads, also called backage roads, function much like frontage roads, only they are placed behind areas to be developed. Rearage roads allow for a greater distance between their connection with cross streets and the intersection of those cross streets with US 20, eliminating problems with congestion. Rearage roads can be implemented over time by acquiring right-of-way – a process that may be costly – or through a method similar to the cross access corridor scheme described in the previous section.

Possible business concerns

Businesspeople may object to access management because they believe it makes access less convenient for impulse customers and delivery vehicles. However, it has no effect on the demand for products and services they offer. Studies show access management generally does not harm local businesses.

Local businesses that depend upon drive-by traffic may raise concerns that their patronage will be hurt by medians and driveway limitations. Others may claim they will be affected because customers and delivery vehicles will find it less convenient turning into a dedicated driveway, rather than just pulling off the road into a parking lot with a continuous curb cut.

Several studies were conducted in the 1990s to find the potential economic effects of access management. Due to the proprietary nature of sales information and the factors that affect business activity, analysis of this issue has been difficult. Most studies have focused on business owner perceptions of impacts, before and after case examples, or generalized comparisons of business activity across corridors.

Consider this: the fast-growing suburbs of Denver, Phoenix, Kansas City and San Francisco have some of the nation's strictest access management regulations. They also have prospering commercial districts, and access management has not deterred new businesses.

In 1999, the Kansas Department of Transportation studied 15 businesses that had filed inverse condemnation lawsuits on access related issues. In nearly every case, the landowner had claimed that access management would have devastating effects on their business and the highest and best use of their property. Some had been compensated for potential impacts. Each property was studied to find if the economic impacts had been realized.

In all but one of the cases either the claimant was still in possession of the property and operating the business, the property was being used for the same use by a different operator, or the use of the property had been upgraded. The only exception was where a main road was relocated, and two gas stations remained on the old road, which was converted to a frontage road. In this case, drivers had to go miles out of their way to reach the frontage road, and the gas stations went out of business.

The Texas Department of Transportation conducted a study of the economic impacts of left-turn restrictions in the mid-1990s. Key findings included the following:

- Perceptions of business owners before a median was installed were more pessimistic than what usually happened.
- Business owners reported no change in pass-by traffic after median installations.
- Most business types (including specialty retail, fast-food restaurants and sit-down restaurants) reported increases in numbers of customers per day and gross sales, except for gas stations and auto repair shops, which reported decreases in the numbers of customers per day and gross sales.
- Most adverse economic impacts were realized during the construction phase of the median installations.
- Employment within the corridors experienced upward trends overall, with some exceptions during construction phases.
- When asked what factors were important to attracting customers, business owners generally ranked "accessibility to store" lower than customer service, product quality and product price, and ahead of store hours and distance to travel.
- About 94% of business owners reported that their regular customers were at least as likely or more likely to continue patronizing their business after the median installation.
- Along corridors where property values were studied, the vast majority of land values stayed the same or increased, with very few exceptions.

Iowa State University conducted a statewide study of the effects of access management on business vitality in 1996. Results showed that:

- Corridors with completed access management projects performed better in terms of retail sales than the surrounding communities. Business failure rates along access managed corridors were at or below the statewide average for Iowa. Although this suggests that access management projects generally did not have an adverse effect on the majority of businesses, some businesses may have been negatively impacted.
- 80% of businesses surveyed along access managed corridors reported sales at least as high after the project was in place. Relatively few businesses reported sales declines associated with the access management project, although these business owners clearly felt that they were hurt by the project. The firms perceiving negative impacts were a mixture of business types.
- Similarly, about 80% of businesses reported no customer complaints about access to their businesses after project completion. Those businesses that tended to report most complaints were highly oriented toward automobile traffic.
- In all cases, 90% to 100% of motorists surveyed had a favorable opinion of improvements made to roadways that involve access management. The vast majority of motorists thought that the improved roadways were safer and that traffic flow had improved.

Although several studies assessed the potential economic damage from access management, none have examined the potential long-term economic benefits. Poorly designed access not only hurts the character and efficiency of a corridor, but also its economic vitality over time. Property values that have increased rapidly during commercial development tend to decline after the area is built out, if the character and efficiency of the corridor is hurt in the process. The result is a pattern of disinvestment as successful businesses choose other, higher quality locations. This pattern is seen throughout the region, including in Vine Street in Eastlake, Euclid Avenue in Wickliffe, and Mentor Avenue in Painesville Township. (Studies compiled in *Economic Impacts of Access Management*, Kristine M. Williams, AICP, Center for Urban Transportation Research, University of South Florida, 2000.)

4.5 Road safety

The US 20 corridor does not live up to its nickname of “Blood Alley,” but there are safety concerns that need to be addressed.

Residents, businesspeople and town officials generally agree that US 20 is an unsafe road. Narrow lanes, traffic that normally exceeds design speeds and posted speed limits, heavy truck traffic, lack of access management and threatening winter weather have helped to give the road the nickname “Blood Alley”. Between 2000 and the present, however, little blood has been spilled along the US 20 corridor. No fatal accidents happened during that time, and on average an accident where injuries result happen once every 24 days. An accident without injuries happens, on average, about twice a month. About 10% of all accidents in Madison Township take place on US 20.

Year	Fatal crashes	Injury crashes	Other crashes	Total crashes	Deaths	Injuries
2000	0	14	24	38	0	22
2001	0	12	33	45	0	21
2002	0	14	28	42	0	25
2003	0	20	23	43	0	30
2004	0	14	22	36	0	21
2005*	0	17	36	53	0	26

* = 2005 compiled data to June 1. Estimate of annual totals shown (January 1 to June 1 crashes x 2.4).
Ohio Department of Public Safety

Of the 226 accidents between January 2000 and May 2005, 26% may be attributed to inclement weather. 42 accidents (18%) during that time took place under rainy conditions, six (3%) with sleet, and 11 (5%) with snow. The percentage of accidents due to inclement weather is slightly higher than the state as a whole.

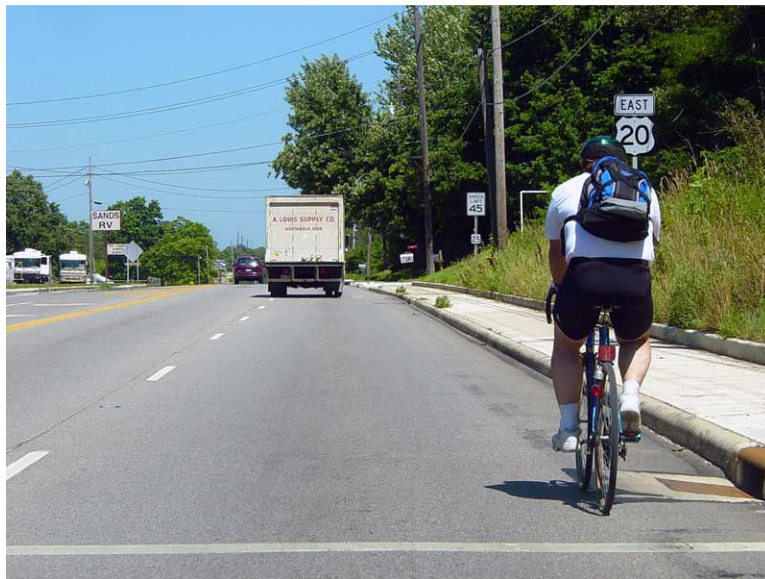
Many accidents took place at low speeds, implying that they are “fender benders” at intersections, or took place at access points. 17% of all accidents took place at speeds below 10 miles per hour; 23% between 10 and 19, 11% between 20 and 29, 28% between 30 and 39, 39% between 40 and 49, and 2% at 50 or above.

How much that the low accident rate can be credited to driver caution – the substandard design of the road actually causing drivers to be far more diligent and conservative than normal – cannot be measured.

4.6 Pedestrian and bicycle provisions

Existing sidewalks are sporadic, neglected and unsafe, and there are no accommodations for bicycle riders. As US 20 is upgraded, sidewalks and bicycle lanes should be built on both sides of the road.

The American Association of State Highway and Transportation Officials’ (AASHTO) “Green Book” states “Providing safe places for people to walk is an essential responsibility of all government entities involved in constructing or regulating the construction of public rights-of-way.” The need for sidewalks exists along busy roads in exurban areas like Madison Township, because higher traffic speeds and a general absence of lighting increase the potential of accidents to those walking on or adjacent to the traveled way. The limited data available suggests that sidewalks in rural areas do reduce pedestrian accidents. Sidewalks can be found on both sides of US 20 along most of the road between Euclid and Painesville, despite the suburban nature of the area, and are frequently used by area residents, hotel guests, and workers and shoppers using public transportation.



Cyclists urge drivers to “share the road,” but it can be challenging with narrow lanes, wide trucks, and impediments like storm drainage grates.

very narrow tree lawn, usually one to two feet wide, separates sidewalks from traffic lanes. This nearly non-existent buffer between pedestrians and fast traffic, much of it being heavy vehicles, can make walkers feel uncomfortable and unsafe.

Both the bicycle level of service (BLOS) and pedestrian level of service (PLOS) along US 20 are poor. NOACA also listed North Ridge Road as not suitable for bicyclists but there may be no alternate route on their 2003 Bicycle Transport Map of Lake County. The following data was used in a formula published by the Transportation Research Board to determine BLOS and PLOS.

Sidewalks along US 20 leave a lot to be desired. East of Hubbard Road, sidewalks run along much of the north side of US 20 to Dock Road, with no sidewalks serving the south side. West of Hubbard Road, sidewalks follow much of the south side of US 20, with few sidewalks on the north side. There are many gaps where there are no sidewalks, including the busy commercial area near Hubbard Road. Sidewalks also tend to disappear under driveways and paved areas that meet US 20 in a continuous curb cut.

Where they exist, sidewalks are generally in poor condition. They are often cracked or grown over, and covered in pebbles. A

Lanes per direction: 2
Outside lane width: 10 feet
Paved shoulder/bike lane/marked parking width: 0 feet
Bidirectional traffic volume/ADT: 15,000 vehicles/day
Posted speed limit: 45 mph
Heavy vehicle percentage: 5%
FHWA pavement condition rating: 4 (good)
Percentage of segment with occupied parking: 0%
Percentage of segment with sidewalks: 50%
Sidewalk width: 4 feet
Sidewalk buffer/parkway width: 1 foot

BLOS score: 5.05, **level of service E** (4.51-5.50) - very low
PLOS score: 4.22, **level of service D** (3.51-4.50) - moderately low

(Landis, Bruce, "Real-Time Human Perceptions: Toward a Bicycle Level of Service," Transportation Research Record 1578 (Washington DC, Transportation Research Board, 1997).

The AASHTO recommends sidewalks six to eight feet wide along both sides of rural arterial streets with an average daily traffic count of 2,000 or more. Because the proposed road profile includes separate bicycle lanes, this plan recommends five foot wide sidewalks through the corridor, separated from the road surface by a five foot wide tree lawn and snow storage area. If bicycle lanes will not be included when US 20 is improved, this plan recommends four to six foot wide sidewalks along both sides of US 20 through out Madison Township.

4.7 Public transportation

Public transit does not have a measurable effect on US 20 traffic. However, changes can be made that will improve both transit service and traffic flow on the road.

Fixed route public transportation along the US 20 corridor is limited to Laketran route 4, which provides service between the North Madison area and downtown Painesville. The route follows US 20 from the western end of the township to Hubbard Road, where it turns north. There are three eastbound and two westbound buses on weekdays, and no weekend service. (Route 11, an express line between Madison Township and downtown Cleveland, does not serve and is not connected to US 20.)

There are no fixed bus stops; riders must signal the bus as it approaches. This may contribute to the unpredictability of traffic patterns along US 20. This plan recommends fixed and posted bus stops along US 20. Although it will not stop traffic delays from the bus stopping to pick up and discharge passengers, it may reduce the number of stops, and make them more predictable.

As the population of Madison Township increases, there may be additional demand for fixed route public transit. The plan recommends off-peak sharing of a large parking lot at a shopping center or big box store as a park-and-ride facility. Increased availability of public transit may not reduce traffic on US 20, but it can serve as an amenity that improves the quality of life for residents by providing an alternative to driving on the road.



4.8 Pending road improvement plans

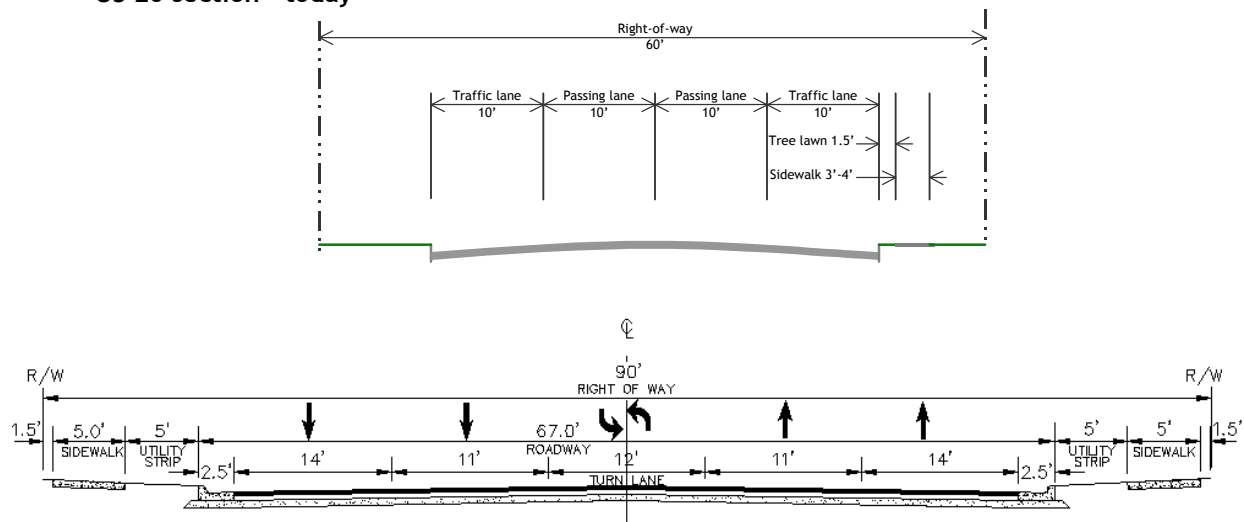
Because US 20 is not considered congested, there are no immediate plans to improve or rebuild the road by state and regional agencies. Future projects, though, should comply with this plan.

The last major improvement to US 20 was in the 1930s, when it was widened from two lanes to four as part of a Works Project Administration (WPA) project. In the late 1980s, the Lake County Engineer and the Ohio Department of Transportation (ODOT) worked on plans to widen the traffic lanes on US 20. The plan were never implemented. In 2002, work began on widening lanes and adding left hand turn lanes at the intersections with Townline Road and Green Road.

At the time this plan was written, there are no plans by ODOT to widen or otherwise improve US 20 through the township. Improvement of US 20 is considered a very low priority by the Northeast Ohio Area Coordinating Agency (NOACA). Of the 2,345 road segments that are inventoried in the Northeast NOACA 2004 Congestion Management System, US 20 between Townline Road and Hubbard Road is ranked 1,287th for volume to capacity ratio (0.527), and 1,768th between Hubbard Road and the Ashtabula County line (0.383). By comparison, the most congested road segment in Lake County, a section of Lake Shore Boulevard (OH 283) between Reynolds Road (OH 306) and Munson Road (OH 615) in Mentor, has a volume-to-capacity ratio of 1:352.

US 20 today is essentially unchanged from the 1930s; it remains a road with four narrow 10-foot wide traffic lanes in a 60-foot right-of-way. The road does not meet modern standards, for lane and right-of-way width, snow storage, or pedestrian and bicycle accommodations. Despite the lack of congestion according to collected data, the road is still in urgent need of improvement.

US 20 section - today



This illustration shows a cross-section of US 20 today, and the cross-section recommended by this plan.

The proposed cross section is 90 feet wide, adding just six to ten feet to the right-of-way north and south of the road.

Traffic lanes are widened from 10 feet to 11 to 14 feet. A 12-foot wide turnlane separates the carriageways. Left turn lanes are cut into the median at appropriate locations.

A four-foot wide bicycle lane, including two feet for curbs and gutter, could be installed on the edge of each carriageway. Three-and-a-half to five-foot wide tree lawns accommodate landscaping and winter snow storage, and buffer the four-foot wide sidewalks from traffic.

Zoning requirements for building setbacks, parking area stacking lane depth, and landscape areas should consider the future width of the right-of-way, and the desired building setback or depth of the landscaped area. The plan recommends using the right-of-way centerline for setback requirements, rather than distance from a right-of-way boundary that may change in the future.

4.9 Goals and strategies

TR-1 Traffic flow along the US 20 corridor should be smooth. Attributes of US 20 that contribute to unnecessary congestion, cause driver frustration and anxiety, and reduce traffic capacity will be minimized.

- **TR-1-S1** Access management. Work with the state and county to create access management regulations that are beneficial to the Township

Priority	low 1 2 3 4 5 6 7 8 9 10 high
<i>Critical to reduce congestion, improve traffic flow, reduce accidents, and increase carrying capacity. Considered an extremely important issue, and a high priority among residents and the business community.</i>	
Ease of implementation	difficult 1 2 3 4 5 6 7 8 9 10 easy
<i>Access management in townships is typically administered by county and state agencies, but could be implemented by amending parking area requirements in the zoning resolution. Work with county officials to create access management standards. May be some opposition from businesses and property owners, despite support shown by survey results.</i>	
Cost of implementation	low 1 2 3 4 5 6 7 8 9 10 expensive
<i>Writing and adopting a zoning resolution amendment.</i>	
Timeframe	Within three months of plan adoption.

TR-1-S2 Review and revise parking standards to have standards for locating access points for parking lots. There should be 500 feet between parking access points along the same side of the street and access points should be located so that they line up with access points from across the street or have at least of 150 foot off set.

Priority	low 1 2 3 4 5 6 7 8 9 10 high
<i>Critical to reduce congestion, improve traffic flow, reduce accidents, and increase carrying capacity. Considered an extremely important issue, and a high priority among residents and the business community.</i>	
Ease of implementation	difficult 1 2 3 4 5 6 7 8 9 10 easy
<i>Zoning Commission or Trustees will be required to create the language.</i>	
Cost of implementation	low 1 2 3 4 5 6 7 8 9 10 expensive
<i>Implementing a zoning resolution amendment.</i>	
Timeframe	Future; when roads are planned for improvement.

TR-1-S3 Traffic signal spacing. Work with ODOT on spacing traffic signals as far apart as possible on US 20, to reduce stop-and-start traffic, travel times, fuel consumption and air pollution. Spacing should be wider in areas between commercial nodes.

Priority	low 1 2 3 4 5 6 7 8 9 10 high
<i>Increased spacing will improve traffic flow, reduce accidents, and increase carrying capacity of US 20.</i>	
Ease of implementation	difficult 1 2 3 4 5 6 7 8 9 10 easy
<i>Working with state and county officials, who may be hesitant to support wider traffic signal spacing than called for by agency policy.</i>	
Cost of implementation	low 1 2 3 4 5 6 7 8 9 10 expensive
Timeframe	Future; when roads are planned for improvement.

TR-1-S4 Road profile. Work with state and/or county officials when US 20 is improved or reconstructed, to ensure the proposed road profile or cross-section will improve safety, increase driver confidence, and minimize any potential for congestion and frustration. The ideal road profile should include, but not be limited to, the characteristics described in the plan text.

- *Minimum of two 12' wide lanes in each direction.*
- *Dedicated left turn lanes at collector street intersections.*
- *4'/1.2m wide bicycle/snow lanes in each direction.*
- *Raised curbs.*

Priority	low 1 2 3 4 5 6 7 8 9 10 high
Necessary to reduce congestion and improve traffic flow, considered a very high priority among residents and the business community.	
Ease of implementation	Difficult 1 2 3 4 5 6 7 8 9 10 easy
Working with state officials. There may be some resistance to improvements at a higher-than-minimum standard.	
Cost of implementation	low 1 2 3 4 5 6 7 8 9 10 expensive
Township may have to bear some of the cost for amenities or improvements beyond ODOT minimum standards.	
Timeframe	Future; when roads are planned for improvement.

TR-2 Unnecessary vehicle trips should be reduced on US 20.

TR-2-S1 Alternate routes. Support improvements to north-south roads outside of the corridor area, which would provide better access to Interstate 90 – an alternative to US 20 for longer east-west trips.

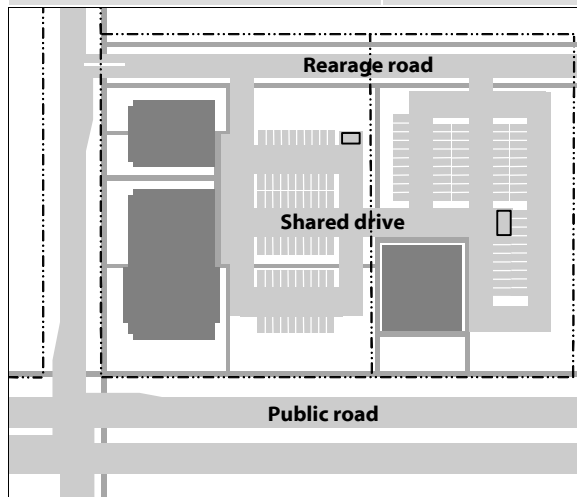
Priority	low 1 2 3 4 5 6 7 8 9 10 high
Outside the corridor area; indirect impact. Issues directly impacting the corridor area itself should be addressed first. I-90 access should be addressed more in the township comprehensive plan.	
Ease of implementation	Difficult 1 2 3 4 5 6 7 8 9 10 easy
Working with county and state officials, and lobbying elected officials.	
Cost of implementation	low 1 2 3 4 5 6 7 8 9 10 expensive
Improvement to township-owned and maintained roads may be costly. State and county will bear expense of improving roads it owns.	
Timeframe	Long-term.

TR-2-S2 Cross access. Require parking areas to include strategically located cross access aisles, or provisions for future cross access, to existing or future parking areas on adjacent lots, so driving between businesses located on different lots does not involve returning back to the street. Require building interconnection provisions whenever a parking lot is resurfaced, or a site is redeveloped. Require dedication of a permanent access easement for cross access drive aisles.

Priority	low 1 2 3 4 5 6 7 8 9 10 high
Access management issues considered extremely important by most respondents, including business and property owners, in all surveys and meetings; rearage roads often mentioned.	
Ease of implementation	difficult 1 2 3 4 5 6 7 8 9 10 easy
Amend zoning resolution to add requirements and standards. May be some opposition from businesses and property owners.	
Cost of implementation	low 1 2 3 4 5 6 7 8 9 10 expensive
Writing and adopting a zoning resolution amendment.	
Timeframe	Within six months of plan adoption; with zoning resolution amendments addressing other issues in this plan.

TR-2-S3 Common rearage roads. Require interconnecting rearage roads for commercial development on deep lots. Require dedication of a permanent access easement for such roads.

Priority	low 1 2 3 4 5 6 7 8 9 10 high
Access management issues considered extremely important by most respondents, including business and property owners, in all surveys and meetings; rearage roads often mentioned.	
Ease of implementation	difficult 1 2 3 4 5 6 7 8 9 10 easy
Amend zoning resolution to add requirements and standards. May be some opposition from businesses and property owners.	
Cost of implementation	low 1 2 3 4 5 6 7 8 9 10 expensive
Writing and adopting a zoning resolution amendment.	
Timeframe	Within six months of plan adoption.



TR-3 Pedestrians and alternative forms of transportation should be accommodated along the US 20 corridor.

- TR-3-S1 Bicycle accommodation. See TR-1-A3 above. Work with state and/or county officials when US 20 is improved or reconstructed, to ensure the proposed road profile includes bicycle/snow lanes. Work with state or county officials when collector roads crossing US 20 are improved or reconstructed, to ensure the proposed profile includes bicycle/snow lanes or shoulders that can be safely used by bicyclists.

Priority	low 1 <u>2</u> 3 4 5 6 7 8 9 10 high
Seen as desirable, but not a high priority, among township residents and businesses.	
Ease of implementation	easy 1 2 3 4 <u>5</u> 6 7 8 9 10 difficult
Working with state officials. There may be some resistance to improvements at a higher-than-minimum standard.	
Cost of implementation	low 1 2 3 4 <u>5</u> 6 7 8 9 10 expensive
Township may have to bear some of the cost for amenities or improvements beyond ODOT minimum standards.	
Timeframe	Future; when roads are planned for improvement

- TR-3-S2 Sidewalks. Work with state and/or county officials when US 20 is improved or reconstructed, to ensure sidewalks are added. Require property owners along US 20 and collector streets to add sidewalks when the property is developed, redeveloped, or major improvements are made. Require a tree lawn or landscape/hardscape strip, planted with hardy salt-tolerant vegetation preferably grown in a local nursery, between sidewalks and the road, for landscaping, plowed snow, and a physical buffer that will increase the perception of safety and security among pedestrians.

Priority	low 1 2 3 4 5 <u>6</u> 7 8 9 10 high
Seen as desirable, but not a high priority, among township residents and businesses. AASHTO strongly recommends sidewalks in suburban and exurban commercial areas.	
Ease of implementation	difficult 1 2 3 4 <u>5</u> 6 7 8 9 10 easy
Working with state officials. There may be some resistance to improvements at a higher-than-minimum standard.	
Cost of implementation	low 1 2 3 <u>4</u> 5 6 7 8 9 10 expensive
Township may have to bear some of the cost for amenities or improvements beyond ODOT minimum standards; JEDD revenue should be earmarked towards this. AASHTO standards may be used in the township's favor.	
Timeframe	Future; when roads are planned for improvement.

- TR-3-S3 Public transportation. Work with businesses and Laketran to allow the use of large parking areas for park-and-ride facilities. Consider park-and-ride facilities as an off-peak use which should not affect the required number of parking spaces required for other uses on the site.

Priority	low 1 <u>2</u> 3 4 5 6 7 8 9 10 high
Public transit may remove some vehicle trips from US 20, but demand is low.	
Ease of implementation	difficult 1 2 3 4 <u>5</u> 6 7 8 9 10 easy
Working with Laketran and business or property owners.	
Cost of implementation	low 1 2 <u>3</u> 4 5 6 7 8 9 10 expensive
No cost to build new park-and-ride lots. The underlying property owner may want some compensation for use of their parking lot; would Laketran pay?	
Timeframe	Future; when public transit service is expanded.